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Guest Editorial

The Doctor and Birth Control.

FEW subjects have caused such bitter polemic as birth control. On the one hand, an influential and nation-wide group, composed largely of women philanthropists, insists that every wife should have contraceptive advice regardless of medical, economic or social reason and that she herself should be the sole arbiter of when pregnancy shall take place. At the other extreme stands an irreconcilable and powerful body, world-wide in its affiliations, which holds that contraceptive devices should never be used, even by sick women in whom pregnancy would mean certain death. Between these two viewpoints all gradations of opinion are met.

Where is the doctor to stand in this controversy? That he must take *some* stand is clear. The problem has been brought home to every practitioner in Virginia by the recent action of the State Medical Society endorsing contraception when medically indicated; this is in accord with similar action taken by the American Medical Association in 1937 and with resolutions passed by several state societies. Moreover, with the increasing attention given to birth control in the lay press, more and more women will be asking for such advice. But there is a much more important reason for insisting that the doctor take a stand on this issue: whether he likes it or not he faces here an important responsibility, one that bears not only on the immediate health of his patients but on the whole future pattern of family life in the community he serves.

What is this responsibility?

It is a responsibility which has hitherto been accorded little place in medical practice and one which many doctors are still hesitant to assume. It is the responsibility of being the judicious, far-seeing, but friendly counsellor of his younger married patients in family planning. In most instances this will entail laying stress, either by innuendo or direct statement, on the desirability of having children, but in a few cases it will call for family limitation. It is thus a two-fold responsibility based on the belief that *the trouble with birth control is likewise two-fold: there is too little of it and too much.* There is too little of it among women suffering from hypertension, heart disease, tuberculosis and the like; too little among the feeble-minded continually begetting more feeble-minded; too little among the indigent. But, contrariwise, there is surely too much birth control employed by those American women who spend a total of $200,000,000 a year for contraceptive materials which they purchase through some 300,000 outlets including 57,000 drugstores. Similarly, it would appear that there is excessive dissemination of birth control advice by certain of our large contraceptive "clinics", for in 1940 the 4,790 "patients" seen at one of these had had, on the average, only 0.7 children each after

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more than four years of married life. To correct the "too little" and the "too much",—this is the problem and the responsibility.

This vitally important problem is now in the lap of the medical profession. And rightfully so, for no one else can meet the many issues involved. Only the "doctor-patient relationship" is of that intimate, confidential nature which will permit discussion of the topics which must be discussed. Only the doctor has at his disposal the means of controlling conception safely and effectively. And only he, as a rule, can give advice on family planning which will be gladly received and carefully weighed. But, if this be true, what is his advice to be? On what grounds should birth control instruction be given?

In an effort to open this question, the opinion of the 192 members of the National Medical Council on Birth Control was recently sought concerning the advisability of endorsing the following policy:

> **The National Medical Council on Birth Control approves of giving contraceptive advice to the following groups of married women *only:***
>
> 1. **Women with organic diseases as attested by a reputable physician. By organic disease is meant: Chronic hypertension, rheumatic heart disease, active or recently active pulmonary tuberculosis, diabetes mellitus, syphilis, chronic pyelitis and similar conditions in which definite disease processes are demonstrable.**
> 2. **Women who have given birth to defective children or who are suffering from a disease known to be hereditary.**
> 3. **Women who have been delivered by cesarean section or who have undergone a major surgical operation during the previous year.**
> 4. **Women who have given birth to an infant within the past two years or who have had an abortion within the previous year.**
> 5. **Women who have three or more living children.**
> 6. **Women who are suffering from economic distress as attested by investigation.**
>
> **The National Medical Council on Birth Control, although insisting that contraceptive advice should be readily available for all the above groups, disapproves of the indiscriminate dissemination of such advice whether by physician, clinics or drug stores. In the case of drug stores, it believes that the indiscriminate sale of contraceptive materials may become a disservice to the public and would endorse accordingly a move to place the sale of contraceptive materials on a prescription basis.**
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> **The National Medical Council on Birth Control, and its affiliated state and local committees accept as a major phase of its program, the encouragement of parenthood wherever health and economic conditions permit, particularly among the newly married and other childless couples. Pre-marital advice, marriage counsel and treatment of sterility should be made an essential part of every service program so long as they are under the strict supervision of qualified medical, psychiatric and social service staffs.**

At the present writing ninety-five replies to the questionnaire have been received, representing the opinions of leading medical men, mostly obstetricians and gynecologists, in thirty-two states. *The great majority of the group, eighty, voiced either complete approval of the statement or approval qualified by such minor alterations as would have no effect on meaning.* Of these eighty, three volunteered particular endorsement of placing the sale of contraceptives on a prescription basis. Three members of the Council gave equivocal answers, leaving twelve who disapproved. Of these twelve, two regarded the indications as too liberal, citing items 4, 5 and 6 as especially questionable. *Ten of the replies voiced opposition because the indications were too strict.* Most of these ten rather leaned to the viewpoint, as one phrased it, that "this is still a free country and so parenthood should be a free choice". Another, the head of a large university department of obstetrics and gynecology, wrote: "Limitation to medical indications is not practicable. Surely you don't wish to saddle the physician with the enforcement of relative contraception prohibition. It just won't work". Four of these ten objectors specified particular disapproval of placing the sale of contraceptives on a prescription basis.

While these replies show a wide range of attitude and, as a whole, lend themselves to various interpretations, one conclusion would seem inescapable, namely, that a strong body of opinion exists among physicians interested in birth control that this important agent should not be disseminated in "assembly-line" fashion but should be restricted ordinarily to certain broad indications. Naturally, in a field with such wide medical, social and economic ramifications, iron-clad regulations are impossible as well as unwise; and much must always be left to the judgment of the physician and to the peculiar needs of the individual case. Nevertheless, the indications as listed would seem liberal enough to include the vast majority of cases in which contraception is really needed, and, at the same time, restrictive enough to make some inroads, perhaps, on the abuse of the agent. To what degree the latter goal can be approached will depend, in no small measure, on the willingness and adroitness of the doctor in encouraging childbearing in suitable cases. It is hoped, in any event, that these indications will serve as a reminder that the physician does face here an important responsibility. If, as a consequence, he gives this problem his serious, constructive thought, some good will have been achieved.

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AMEBIC DYSENTERY: ITS RECOGNITION AND TREATMENT A CLINICAL DISCUSSION*

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For many years, amebic dysentery has been regarded as a tropical or sub-tropical disease. Our experiences[1,2] and the reports of others[3,4] have led us to the conclusion that such an opinion is totally erroneous. For illustration, since the opening of Duke Hospital in 1930, one hundred patients having active amebic infection have been studied, either on the ward or in the Out Patient Clinic. The term "active amebic infection", as distinguished from the carrier state, is used to include only those patients having an active diarrhea with blood, mucus, and trophozoites in the stool, or those having liver or lung abscess with or without disturbance of bowel function.

The prevalence of the carrier state has been emphasized by many writers, particularly by Craig[5] and Foust,[6] who report that 10 to 20 per cent of the population in the extreme southern states have cysts of E. histolytica in their stools. These patients may or may not have symptoms referable to their infection. Carriers constitute an important public health problem but, because the cysts of E. histolytica can be identified only by specially trained observers, this aspect of the subject is purposely omitted from this discussion.

Although amebic infection is widespread throughout this country, it is much more prevalent in tropical zones. With hundreds of thousands of our troops in foreign lands and many of them in tropical regions, it becomes all the more important that the profession should become thoroughly conversant with amebic infection in all of its manifestations; we should know what symptoms should lead one to suspect its presence; what procedures are required in establishing the diagnosis and, finally, what form of therapy is most effective.

From a practical standpoint, amebic infection may be considered under three general headings: 1) The cyst carrier; 2) Amebic dysentery (colitis); 3) Complications, such as liver, lung or brain abscess. Obviously, such a classification is more or less artificial. *The cyst carrier may have a mild diarrhea or develop a liver or lung abscess without appreciable disturbance of bowel function.* Likewise, amebic colitis and liver or lung abscess may coexist in the same patient. However, for conveni-

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ence, these three phases of amebic infection may be considered separately.

THE CYST CARRIER:

This condition is frequently asymptomatic or the patient may complain of indefinite right lower quadrant pain and may have a mild diarrhea alternating with constipation. Digestive disturbances of varying degree are reported. The history of the case is vague at best and the physical examination is likewise of no significance, except possibly for the finding of slight tenderness over the cecum. The diagnosis must necessarily rest upon the demonstration of cysts of E. histolytica in the stool and, as has been pointed out, this requires the opinion of a trained observer. Although not questioning for a moment the importance of this group of patients, still from a practical standpoint the practicing physician is much more concerned with those patients having the active disease.

AMEBIC DYSENTERY (COLITIS):

The diagnosis of amebic dysentery depends upon the correct evaluation of the history, the physical findings and the laboratory evidence in any given case, and upon the response to specific therapy.

History: Any patient giving a history of a bloody diarrhea should at once be suspected of having amebic dysentery. The onset usually is gradual and the course of the disease is characterized by remissions and relapses. In our experience, blood and mucus were reported in nearly every patient having an active diarrhea. Abdominal pain of varying severity is common and weight loss may be marked. Fever is unusual and the patient frequently can remain at work, though from time to time he may be incapacitated.

Unfortunately, similar histories can be elicited from patients having chronic idiopathic ulcerative colitis, carcinoma of the colon, intestinal polyposis and occasionally in tuberculosis of the intestine. In acute cases bacillary dysentery also must be considered. From the history alone, therefore, the disease may be suspected but cannot be diagnosed.

Physical Examination: The examination in these patients is apt to be disappointing. Occasionally one may demonstrate tenderness over the cecum but this is not striking. Digital rectal examination usually is negative, but should always be done, since it may reveal the presence of carcinoma or polyposis.

The urine and blood show nothing of significance. A secondary anemia is common and occasionally leukocytosis is present.

The diagnosis actually rests upon three procedures: 1) Stool examination; 2) Proctoscopic (sigmoidoscopic) study, and 3) x-ray studies after a barium enema.

Stool Examination: It is just as reprehensible to fail to examine the stools of patients having a bloody diarrhea as to omit a urinalysis in patients complaining of frequency or burning on urination. In amebic dysentery the stool usually is soft or mushy and there is gross mucus and blood. Microscopic examination of freshly passed mucus usually will show the motile form of E. histolytica. The pseudopods containing clear cytoplasm and ingested red cells can easily be identified. The organism, as a rule, moves its center of gravity across the field. In general, there are few white cells in the stool and when one sees a specimen loaded with pus, it usually means that the patient does not have amebic dysentery.

Proctoscopic (sigmoidoscopic) Examination: It goes without saying that any physician will examine the throat of a patient thought to have diphtheria, or will do a speculum examination when carcinoma of the cervix is suspected, but how few physicians will examine by direct inspection the rectal mucosa of patients having a bloody diarrhea! Yet, proctoscopic or sigmoidoscopic study will give the answer to most of the problems in this group of cases. The procedure itself is easy. The examination can be carried out in the office or even in the home. With simple and inexpensive equipment a satisfactory study can be made of any patient who can assume the knee-chest position. The ulcers are discrete and irregular, varying in size from one to five millimeters and covered by grayish white mucus. The edges are sharp and tend to be undermined with the intervening mucosa relatively normal, but it may appear slightly edematous. There is little or no inflammatory reaction surrounding these ulcers. Indeed, the appearance of these ulcers is so characteristic as to be diagnostic in most cases. The mucus covering the ulcers should be removed by an applicator and examined at once, after adding a drop of normal saline. In our experience, motile amebae can be demonstrated in this way in practically all cases having active infection.

Barium Enema: X-ray of the colon is important in all patients having a bloody diarrhea, but is use-

ful in diagnosis of amebic dysentery largely by excluding diseases such as carcinoma of the colon, polyposis or idiopathic ulcerative colitis. There may be some spasm and irritability of the cecum, but as a rule amebic dysentery cannot be diagnosed by x-ray.

Differential Diagnosis: The diseases most likely to be confused with amebic dysentery are: 1) Chronic idiopathic ulcerative colitis; 2) Carcinoma of the rectum; 3) Intestinal polyposis, and rarely 4) Tuberculosis of the intestine. In acute cases bacillary dysentery also has to be considered.

As has been mentioned above, the history is of little value in differentiating between most of these conditions. Naturally, if the disease has been present for years, carcinoma of the colon can be excluded. Likewise, an explosive onset with fever and prostration suggests bacillary dysentery.

Ulcerative colitis with the granular "sandpaper" mucosa, containing pin point or larger ulcers and no normal mucosa whatever can be recognized by proctoscopic examination at a glance. Likewise, polyposis or carcinoma in the lower rectum can be identified at once. The x-ray will also give the diagnosis in such cases. As has been emphasized, the diagnosis must rest upon stool and proctoscopic examination together with barium enema x-ray studies. The intelligent use of these three procedures will give the diagnosis in practically every case.

HEPATITIS OR LIVER ABSCESS:

Complications, such as hepatitis and liver or lung abscess, are fairly common; they occurred in 11 per cent of our patients. It is a safe rule to follow that any patient having amebic dysentery who develops a fever should be suspected at once of having one of these conditions.

History: It should be emphasized that patients may develop liver or lung involvement without ever having a diarrhea. In these patients the onset is gradual, the patient complaining of malaise, vague right upper quadrant pain and later chills and fever. Pain referred to the right shoulder or neck may occur. With extension through the diaphragm pleural pain is to be expected and lung abscess or an empyema may develop at any time.

Physical Findings: The patient usually presents a picture of an acute febrile illness. Jaundice is seen only occasionally. Tenderness over the liver, especially to fist percussion, is the rule and a fixed diaphragm on the right can be demonstrated in many cases. The liver may or may not be enlarged. Proctoscopy may give the answer by demonstrating typical ulcers, but a normal rectal mucosa does not rule out amebic infection.

A leukocytosis is to be expected. Fluoroscopic study will show a high diaphragm on the right, which does not move on respiration. A flat plate of the abdomen is rarely helpful. Occasionally one is justified in visualizing the liver by the use of thoratrast. The finding of motile forms or cysts of E. histolytica in the stools will confirm the diagnosis, but unfortunately one is rarely able to demonstrate them.

Lung Abscess: This merely means the extension of the process through the diaphragm and can occur in any case of liver involvement. The picture is that of the usual lung abscess with the one exception, that the sputum is anchovy colored and may contain motile organisms.

TREATMENT:

The cyst carrier is largely a public health problem. The presence of cysts in the stool probably means tissue invasion and that the patient may develop active disease at any time. What factors prevent most of these patients from having acute amebic dysentery or liver abscess are not known. Our experience has led us to the belief that dietary deficiencies may play an important part. We have followed patients who continue to relapse until an underlying deficiency of the B complex is corrected. Certainly every effort should be made to rid the cyst carrier of his infestation. A well balanced diet supplemented by vitamin therapy is important. Then one should use any of the specific drugs which will be discussed under the treatment of the active forms of the disease.

TREATMENT OF AMEBIC DYSENTERY:

Emetin is the time honored drug in the treatment of amebic dysentery. However, it is known to be toxic and since spectacular recoveries are the rule after treatment with certain drugs which are nontoxic, it has been our practice to resort to emetin only when the patient fails to recover with other forms of therapy, except in cases of liver and lung abscesses, as described below.

Whenever possible, the patient should be hospitalized. A well balanced diet supplemented by large doses of nicotinic acid, thiamin and riboflavin

is given. Specific therapy consists of the following: 0.25 gram carbarsone by mouth twice daily for ten days and 5 grams of yatren (chinofon) in 250 c.c. of water by retention enema daily. The results of the treatment are striking. The diarrhea promptly ceases, the appetite returns and within twenty-four to forty-eight hours the patient experiences a marked improvement in his sense of well-being. Examination of the rectal mucosa will show rapid healing of the ulcers, which usually disappear entirely within five to seven days.

Unfortunately, relapses are frequent, especially in patients subsisting upon a deficient diet. It is important, therefore, to correct their deficiency by diet and vitamin therapy after leaving the hospital and also to repeat the course of carbarsone and yatren after a two-week rest period.

TREATMENT OF LIVER AND LUNG ABSCESS:

When complications such as hepatitis, liver or lung abscess are suspected, the patient should be hospitalized at once and be given immediately one-half grain (32 mgm.) of emetin by hypo twice daily for seven to ten days. Because of the toxicity of the drug the patient should be watched carefully, paying particular attention to the cardiovascular system. General supportive measures, usually employed in the treatment of the acutely ill patient, are instituted. Surgical drainage of the abscess may be required but the decision to drain will necessarily depend upon the situation in each individual case.

In summary, then, amebic infection is not at all uncommon in temperate climates. Any patient giving a history of a bloody diarrhea should at once be suspected of having amebic dysentery. Microscopic examination of a freshly passed stool, or material obtained by proctoscopic examination, usually reveals the presence of E. histolytica. The proctoscope is easy to use and a most valuable aid in differential diagnosis.

The response to therapy is spectacular but relapses are common. A well balanced diet supplemented by vitamins of the B complex seems to aid in the prevention of relapses.

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RELATIONSHIP OF HYPERTENSION TO SURGICAL DISEASES OF THE URINARY TRACT*

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Within recent years many experimental clinical and pathological observations have been made illustrating the association of renal disease with elevation of the blood pressure.

The experiments of Goldblatt[1] show the relationship of renal ischemia to elevation of the blood pressure. By constricting one or both renal arteries he and his co-workers produced hypertension in experimental animals. In cases of unilateral vascular occlusion the elevated blood pressure was transient but in bilateral occlusion permanent malignant hypertension occurred. Elevation of the blood pressure in experimental animals has also been produced by Harrison, Maison, Resnic and Rainey[2] by ligation of the ureters.

Kimmelstiel and Wilson[3] noted pyelonephritic changes in a large percentage of the kidneys of hypertensive individuals coming to autopsy and Weiss and Parker[4] state that there is a great tendency to severe hypertension in patients with pyelonephritis. On the basis of post-mortem records of Boston City Hospital they estimate that pyelonephritis is responsible for at least 15 to 20 per cent

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of malignant hypertension. Barney, in discussing the paper of Weiss and Parker, stated that he had reviewed the histories of a number of patients operated upon for pyelonephritis and pyonephrosis and found that approximately 25 per cent had definite hypertension. The ages of the patients varied from twelve to sixty years. In fifteen cases blood pressure readings were taken routinely in the clinic following nephrectomy and a drop in blood pressure averaging 30 points systolic was noted. These patients were followed in the clinic for from four months to nine years.

Longcope[5] noted that in bilateral pyelonephritis an increase in the blood pressure was the rule as the disease progressed. Recently Maher and Wasika[6] in reviewing the case records of 600 patients with hypertensive vascular disease, found 101 of these patients with various types of urologic lesions. Parenchymal renal disease was found in only 26 cases; the remaining patients had either obstructive or inflammatory lesions of the urinary tract. Hypertrophy of the prostate, chronic pyelonephritis and renal stones and their complications accounted for the majority of the cases. Clinically, the relationship of prostatic obstruction and elevation of the blood pressure has been recognized for many years. O'Conor[7] in 1928 noted a fall of abnormally high blood pressure in 74 patients with urinary obstruction following the institution of adequate bladder drainage.

In 1923 Quinby[8] reported a case of unilateral renal disease in which the associated hypertension was relieved by nephrectomy. In recent years many such cases have been reported. Leadbetter and Barkland[9] reported a case of hypertension in a boy, aged 5½ years, relieved by removing a congenitally misplaced kidney. The lumen of the renal artery was partly occluded by a plug of muscle tissue, apparently a congenital anomaly. The renal tissue was essentially normal. Crabtree[10] collected five cases of unilateral destructive renal lesions with hypertension in which the patient improved after nephrectomy, and reported one of his own. The pathological lesions consisted of pyelonephritis with some degree of hydronephrosis. One patient known to have nephritic changes in the opposite kidney had a return of hypertension within a year and died following an operation for intestinal obstruction; another had a return of hypertension ten years after nephrectomy. The remaining four patients were well 2 to 22 months after nephrectomy.

Nesbit and Ratliff[11] reported twelve cases of advanced unilateral inflammatory disease of the kidney, nine of which were accompanied by hypertension. One of these patients presented symptoms of cardiac decompensation and died of pneumonia. Autopsy showed pyohydronephrotic atrophy, fibrosis and vascular thickening of the left kidney, with hypertrophy and dilatation of the ventricles of the heart. Nephrectomy was done in ten cases. Of the seven who also had hypertension, five were relieved of hypertension by nephrectomy. The two in which hypertension was not relieved by nephrectomy had previously suffered toxemia of pregnancy and afterwards hypertension had developed. Nesbit and Ratliff also reported two cases of hydronephrosis accompanied by hypertension. In one case the blood pressure was reduced by bilateral nephrostomy and in the other by nephrectomy.

Parker and Walters[12] reported five cases of unilateral chronic atrophic pyelonephritis associated with hypertension in which the blood pressure returned to normal after nephrectomy. Reviewing 24 case histories of patients previously operated upon for chronic atrophic pyelonephritis they found that eleven showed definite hypertension.

Braasch, Waltman and Hammer[13] found in a study of 1,684 patients subjected to renal surgical procedures at the Mayo Clinic that hypertension occurred most frequently in association with chronic renal infection which caused extensive atrophy of the renal tissue and sclerosis of the blood vessels. A study of 198 cases in which hypertension accompanied renal disease showed that the blood pressure became normal following operation upon the kidney in one-third of the cases. In those cases in which hypertension accompanied atrophic pyelonephritis 70 per cent were relieved by nephrectomy.

Other cases of unilateral renal disease associated with hypertension and relieved by nephrectomy have been reported by Butler,[14] Boyd and Lewis,[15] and D. W. McIntire.[16] In these cases partial occlusion of the renal arteries or sclerosis and thickening of the renal arterioles were noted in the specimens removed.

McCann and Romansky[17] observed a group of patients with hypertension and renal ptosis. They found in these cases that there was an appreciable diminution of the blood pressure, in some cases to a normal level when the patient was kept in bed.

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They also found that the renal blood flow was greater in the recumbent position than when the patient assumed the erect posture. In their cases, although nephropexy did not relieve the hypertension, critical exacerbations of blood pressure with attendant ocular and cardiac symptoms seem to have been prevented.

I have recently operated upon and now have under observation three patients in whom renal pathology was associated with hypertension. In two of these cases nephrectomy was done, and in the third a movable kidney was suspended. In all of these there has been definite clinical improvement, and in two the blood pressure has returned to normal.

CASE REPORTS

Case No. I.—I. G., white female, age nine years, was considered to be in good health until December 25, 1938, when she complained of headache and had a convulsion. During the next 48 hours she had six convulsions. She was admitted to the Hospital Division of the Medical College of Virginia, December 28, 1938, in a comatose condition, with temperature 105°F., right arm and leg flaccid, and some stiffness of the neck. There was moderate leucocytosis. The w.b.c. count was 12,500, and the urine contained 50 to 60 pus cells per high power field. Two days later her blood pressure was 180/140. Lumbar puncture was done, showing pressure of spinal fluid 320 mm. of water. The child's vision was definitely impaired. X-ray examination of the urinary tract January 12, 1939, was negative for stone. Intravenous urogram showed that the left kidney was only about half the size of the right. Both kidney pelves filled well in eight minutes. There was no evidence of obstruction. A definite diagnosis was not made. Nephritis, encephalitis and tumor of the brain were all considered. The child gradually improved, regaining consciousness, the temperature gradually subsided, and partial paralysis of the right side of the body cleared up. She was discharged from the hospital January 29, 1939, in fair condition. There was some blurring of the vision and the blood pressure was 145/95. After remaining home for three days she began to vomit and to complain of headache. She was again admitted to the hospital February 2, 1939. Her physical condition was unchanged; blood pressure varied from 150/100 to 220/180 at different readings. An encephalogram showed evidence of slight hydrocephalus, but no evidence of tumor. She was discharged February 26, 1939, with a diagnosis of essential hypertension. In the discharge note the resident suggested that the left kidney was possibly a cause of the hypertension.

The patient was in fair health with the exception of gradually failing vision until July 17, 1939, when she had a convulsion and was again admitted to the hospital. Her blood pressure on admission was 170/110 and two days later was 240/170. Examination of eye grounds showed moderate edema of both optic discs. The blood count was normal; the urine contained a trace of albumin and a few pus cells. Both ureters were catheterized and pus cells and a culture of Bacillus dysentericus (Flexner) were obtained from both kidneys. B. coli were also cultured from the right kidney. Sixteen per cent of phenolsulphonephthalein was obtained from the right kidney in fifteen minutes and three per cent from the left kidney. Approximately the same amount of urine was obtained from each kidney. An intravenous urogram was made with essentially the same findings reported six months previously.

On July 24th a left nephrectomy was done. At that time her blood pressure was 205/150. Twenty-four hours following nephrectomy the blood pressure began to decline and continued to decline until she was discharged from the hospital on September 16th, 54 days following the nephrectomy. The kidney measured 7 x 4 x 2 cm. There was moderate dilatation of the pelvis, with thickening of the mucosa. Microscopic examination showed atrophy and dilatation of most of the tubules and marked increase of the fibrous stroma with infiltration of large patches of round cells. The vessels, particularly in the medullary portions, showed marked sclerosis and some proliferative endarteritis and occasional necrotizing arteriolitis. The pathological diagnosis was ascending pyelonephritis with marked scarring, diffuse tubular dilatation of intervening tissue, and severe sclerosis with foci of arteriosclerosis in the involved vessels.

On November 8th, about two months after her discharge from the hospital, the child seemed very much improved and her vision had returned almost to normal. The urinalysis was negative except for three to four pus cells per high power field, and the blood pressure was 158/120. Examination four months later showed her in good health, blood pressure 170/120. At the present time, almost two years

since the left nephrectomy was done, the patient is well and active. Her vision has improved to the extent that she attends school regularly and reads any type with ease. Her blood pressure ranges around 170/120. (Chart 1). She has had pyelonephritis of her remaining kidney and was only temporarily relieved of hypertension. She has not had the severe exacerbations, such as high blood pressure, headache, nausea, and blurring of vision since removal of the left kidney. She takes part in all of the activities of a child of her age.

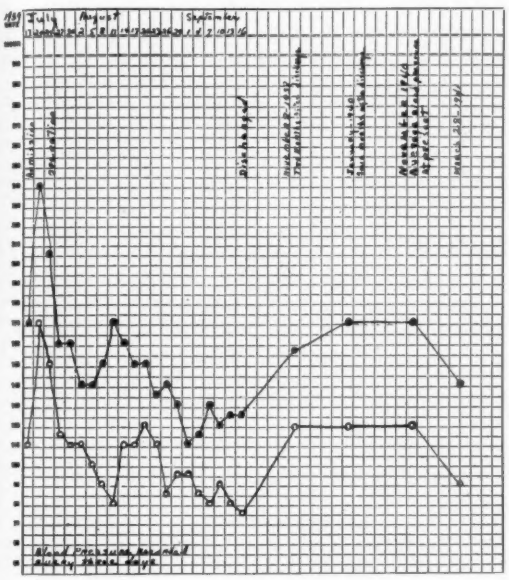

Chart 1. I. G.

Case No. II.—Miss E. B. was admitted to St. Elizabeth's Hospital May 28, 1936, because of severe pain in the left flank, nausea and vomiting. The blood count was normal and the urine contained only a few pus cells. The physical examination was negative with the exception of tenderness below the left costovertebral area. The blood pressure was 130/80. On cystoscopic examination obstruction was met at the left uretero-pelvic area of the ureter, believed to be a non-opaque stone, since there was no evidence of stone on x-ray examination. The nausea and pain persisted, and her temperature and pulse rate became elevated. Two days following admission a nephrostomy was done for drainage. No stone could be found; the left kidney and ureter were edematous and many minute pustules dotted the surface of the kidney. The patient made a satisfactory recovery and left the hospital one month following admission.

She was in good health with the exception of sinus infection until October 28, 1937, when she had a chill and severe pain in the left kidney area. Until her admission to the hospital two days later she had two other chills and required several hypodermics for the relief of pain.

On this admission to the hospital she complained of acute pain in the left flank. There was tenderness below the left costovertebral angle and some abdominal distention. The blood pressure was 140/90. Blood count was normal. The urine contained numerous pus cells. A catheter was passed to the left kidney pelvis without difficulty. There was no residual urine in the kidney pelvis, but the specimen collected was very cloudy. The catheter was left in place for about twelve hours for drainage.

Following this attack of pyelitis she was never entirely free of pain in the left kidney area, and the urine was rarely free of pus. She complained of frequent headaches which were attributed to sinus infection, and her physician noted that her blood pressure which had previously been normal was persistently elevated, averaging between 170 and 180 systolic.

On June 19, 1939, she was again admitted to the hospital, stating that it was necessary for her to be rid of the pain or she could not continue her occupation as a teacher. An intravenous pyelogram showed nothing of significance. The function of both kidneys from concentration of the contrast substance was satisfactory. Phenolsulphonephthalein test showed an output of 28, 16, 9 and 3 at half-hour intervals. The blood pressure was 160/100. Since her pain had not been relieved by palliative measures, and it was felt that the increase in blood pressure was probably caused by unilateral kidney pathology, the left kidney was removed. The pathological diagnosis was diffuse chronic nephritis with arteriosclerosis. She made a prompt recovery from the operation and was discharged from the hospital 15 days after the operation. On discharge her blood pressure was 130/70.

In the first three months after she left the hospital her pressure varied from 130 to 140 systolic. For the next three months it again rose to 160 to 170 systolic. Since then, from January, 1940, to the

present time, it has varied from 122 to 150 systolic; the last reading, on November 5, 1940, was 145/80. (Chart 2).

This case is of particular interest, since the patient has been followed from the onset of her infection. At the first operation the kidney was acutely and severely infected. There was a gradual increase in blood pressure beginning about a year following the onset of infection. Since nephrectomy was done there has

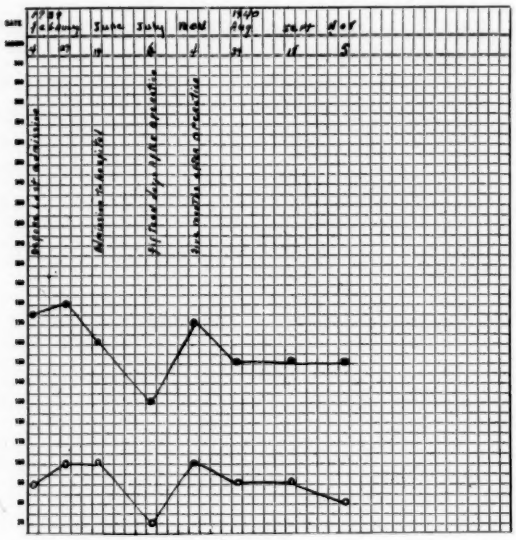

Chart 2. Miss E. B.

been general improvement in her health. Though the sinus infection persists, the headaches are much less severe and the blood pressure average for the past twelve months has been twenty points below the average of the twelve months prior to nephrectomy.

Case No. III.—Mrs. L. S. was admitted to the Hospital Division of the Medical College of Virginia June 21, 1937, because of pain in the right lumbar region and right lower quadrant of the abdomen. The physical examination was negative. The blood pressure was 90/60. The laboratory examinations were negative with the exception of a few pus cells in the urine. X-ray examination of the urinary tract was negative for stone, but there was ptosis of the right kidney and slight dilatation of the kidney pelvis with clubbing of the upper calyx. The patient returned home relieved, June 25, 1937.

When again admitted to the hospital October 5, 1937, she complained of pain in the right flank, hematuria, nausea and vomiting. No blood was noted in the urine on admission, and the vomiting was thought to have been caused by opiates given for relief of pain. On physical examination there was some tenderness over the right costovertebral area. The blood count was normal, and the urine contained 40 to 50 pus cells per high power field. Phenolsulphonephthalein test showed an output of 60, 12 and 5 for three half-hour periods An intravenous pyelogram showed an excellent concentration of the contrast substance in both kidney pelves within five minutes. The right kidney pelvis was larger than the left, but emptied more promptly. Ptosis of the right kidney was noted. On October 11, 1937, the right ureter was dilated with a No. 12 French bulb. There was considerable increase in pain for a few days following this treatment but the pain gradually subsided and the patient was reasonably comfortable when she left the hospital October 20th. Urinalysis at discharge showed ten pus cells per high power field.

She was re-admitted to the hospital May 11, 1939, because of pain in the right flank and right side of the abdomen. There was tenderness below the right costovertebral angle and to the right of the umbilicus. The blood count and urinalysis were normal. The blood pressure was not recorded. Since her previous admission in October, 1937, she had had a perineorrhaphy and radium-induced menopause at another hospital. In the interval her physician had treated her with calcium and sedatives for a number of kidney colic attacks.

The ureteral catheter was passed to the right kidney pelvis and left in place for drainage. After forty-eight hours she was comfortable and the catheter was removed. She left the hospital May 20, 1939, and seemed somewhat improved.

On August 5, 1940, she was again admitted to the hospital with a history of almost constant pain in the right kidney for the past year and severe headache for a period of six weeks. There was tenderness below the right costovertebral angle and over the right upper quadrant of the abdomen. Her blood pressure was 170/120; blood count and urinalysis were normal. X-ray examination of the urinary tract was negative for stone. Intravenous urogram confirmed the previous diagnosis of ptosis of the right kidney with an early hydronephrotic change. After seven days' rest in bed, her blood pressure dropped to 145/95, and her headache was much less severe.

A nephropexy was done on August 13, 1940. Following this her blood pressure continued to decline until at the end of two weeks it was 115/80. From that time there was a slight increase in blood pressure, and on discharge from the hospital September 4th, it was 140/90. Since she returned home, she has had very little renal pain and no headache. Her blood pressure has averaged 130/90. (Chart 3).

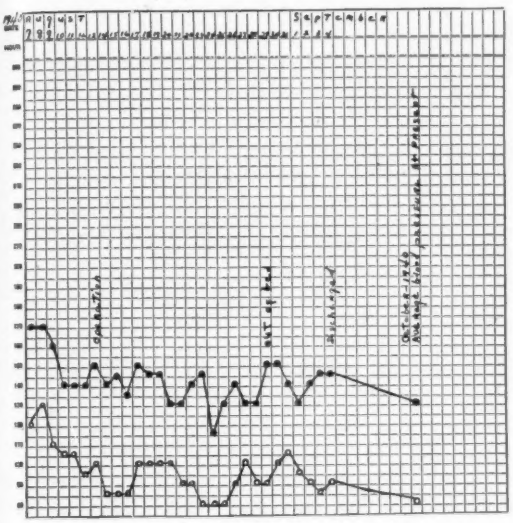

Chart 3. L. S.

Elevation of the blood pressure in this case apparently resulted from nephroptosis described as orthostatic hypertension by McCann and Romansky. Elevation of the blood pressure occurred within a few months prior to operation and has subsided following nephropexy.

CONCLUSION

I. There is sufficient evidence to recognize obstructive lesions and chronic infection of the kidneys as potential causes of elevated blood pressure. Special care in correcting these conditions in their incipiency should aid in reducing the incidence of hypertension.

II. The possibility of surgical disease of the urinary tract should be considered in patients suffering from hypertension.

NOTE: This paper was prepared in 1940 and publication has been delayed so that I might observe these three patients a little longer.

Case No. 1 has shown constant improvement. She was admitted to the hospital on May 28, 1941, because of pyelitis of the remaining kidney. At that time her blood pressure was 140/90.

Case No. 2 has continued well and her blood pressure has remained at a normal level.

Case No. 3 has had a recurrence of her hypertension together with some attacks of headache.

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Professional Building.

OUR DUTY AS PHYSICIANS IN THE PRESENT EMERGENCY—FROM A PATRIOTIC STANDPOINT*

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I am not unmindful of the fact that you bestowed upon me a distinct honor, when you elected me President of your Society, and I am profoundly grateful and appreciative of this recognition.

In war time every person in whose make-up there is a spark of patriotism wishes to do something heroic. In the present conflict the disloyal person is a rarity almost outside of our vision. Everyone wishes that his duties call for some performance which will make him an acclaimed hero. There will be many of our citizens who will have that opportunity. For most of us, however, duty will be a prosaic, as well as a stern, task-master; each person can do something useful and helpful. We need not travel to fields afar to perform services which will help win the war.

Public health work or preventive medicine has made much progress in recent years, due in part to an awakening of the public to the advantages gained. Its foundation may well be based on a clause in the preamble to our Constitution, "to promote the general welfare".

It is good to know that one has a country worth defending. Ours is a nation worthy of defense, because of its heritage. Even if some of us cannot claim that our forbears found a toe-hold upon the crowded deck of the Mayflower, all of us are heirs to those men and women who sailed to found on the barren shores of New England their new world.

Our nation is worth defending because it evermore enriches the chance of God's plain people. Some of you may have lived in a country where there is no middle class, where one lives in the presence of lavish wealth, or in the presence of poverty, bitter and cruel. One of the joys of the traveler in America is the sight of the increasing number of small houses, small and lovely houses, the homes of a great "middle class", so called, where fathers and mothers and little children can live in decency.

Our nation is worth defending because it bears the hopes of all the little peoples of the world, the peoples defrauded, beaten down, destroyed.

No nation can profess strength whose people are physically unfit for efficient service. Consequently, any intelligent defense effort must give first attention to the health status of both its civilian and military populations. The present conflict is no ordinary war. The total capacity to produce and total efficiency are the primary issues involved in this mighty military effort, and it goes without saying that the efforts of the nation possessing these qualities in greatest abundance will ultimately triumph. This means that the health and efficiency of the industrial worker and of all civilians whose responsibility is to produce modern military equipment are equally as important as the health and efficiency of those who carry the rifles, pilot the planes, or drive the tanks. In the light of all this, public health assumes a role of importance second to none in developing military strength. And military strength, we must not forget, depends upon civilian strength and morale. If ever we needed to put to work fully those fundamentals of public health which will promote and conserve the health of our 131,000,000 citizens, we need to do it now.

Total defense presents tremendous problems which we can hope to solve only through intelligent cooperation, careful planning, and a willingness to sacrifice. The whole job is one of teamwork and means sharing the responsibility for the common good.

We know from long experience that mobilization of troops increases the incidence of communicable diseases. Therefore, precautionary measures are being taken and programs are being developed which will reduce preventable illnesses and disabilities. Experiences gained during the previous World War will help us to cope with the present emergency more efficiently and to avoid many mistakes. In fact, ironic as it may seem, tremendous impetus was given both medical and public health advances during the first war which tend to offset or compensate in some measure for the great loss of life and destruction of property. This seems to bear out a statement once made by the illustrious Dr. Charles Mayo, that "When the institutions, the freedom, the wealth, the health, and the very lives of a people

*Address of the President delivered before the Southwestern Virginia Medical Society, at Radford, September 23, 1942.

are jeopardized by destructive forces from without, the primal instinct of self preservation becomes a spur to endeavor and accomplishment"—and war, tragic as it is, seems to leave some good in its wake.

We are reminded that the 1914-1918 war introduced a new era in preventive medicine, public health and sanitation and that many of the most effective public health procedures of today evolved from this period. For instance, trench fever, which had handicapped the British Expeditionary Force, was brought under control as a result of advanced sanitary knowledge which makes it possible to inhibit its development and prevent its spread. The efficacy of immunization procedures such as typhoid vaccine and tetanus antitoxin to prevent typhoid fever and tetanus was definitely established. Botulism was discovered to be caused not only by contaminated meats but by improperly canned vegetables which had become infected. There was acquired increased knowledge regarding the dangers of over-crowding and the importance of isolating patients and segregating contacts exposed to meningitis, influenza, and other infectious diseases.

Among the outstanding contributions to preventive medicine was the Army's candid system of venereal disease control, which helped to inhibit the spread of these disabling afflictions among the troops. Today, civilian populations are approaching the problem somewhat as did Rip Van Winkle—after a twenty year period of indifference. People, at last, have awakened to the fact that syphilis is a disease problem, not a disgrace, and that it can be cured by patient treatment. Enlightened public opinion now encourages educational and other practical control measures.

No small development arising out of the 1914-1918 war was the new interest in child welfare and in periodic physical examinations. This was doubtless due to the realization that many of the physical defects disclosed by military examining boards might have been prevented by intelligent care and training during the early years of life. These and many other advances were realized, making it possible for both medicine and public health to achieve new heights in administering to the health needs of the country in the years which followed.

The World War I doctors, trained in sanitation, returned to civil life, and demobilized soldiers returned to their peaceful pursuits with the marked effects of sanitary control measures impressed on their minds. These were obviously powerful factors influencing the future progress of preventive medicine. The war has fostered propagation of general knowledge concerning sanitation and especially the importance of sputum, excreta, flies, lice, and other vermin in the spread of disease. The negligence in former years, with respect to hygiene, and the needs of the future were brought to light by the first World War, and now the second finds the medical world well prepared to move into the role of camp doctor and nurse.

The campaign of the American Typhus Fever Commission in poverty stricken Serbia in 1919 is a striking example of how the public was educated in preventive medical measures. The terrible epidemics of deadly typhus fever spread in Serbia, Poland, and Russia as an aftermath of the war largely because of the filth, squalor, and chaos left in the wake of the great conflict. The United States Government was inspired to send scientific aid and practical relief into Serbia and Poland. A well organized Typhus Fever Commission went to Serbia and was given dictatorial powers by the helpless government. The success of this American Commission was due largely to a magnificent educational program which it carried to a successful completion, dispelling the superstitions and fatalistic philosophies which had prevailed in that country.

Submarine warfare focused medical attention on the problem of ventilation and the dangers of carbon monoxide and lack of oxygen. This not only aroused educational programs to prevent these hazards wherever they might occur, but also led eventually to successful developments in air-conditioning. Likewise, the modern rat-proofing of ships, docks, warehouses, and other buildings was promulgated by sanitary studies and experience gained largely from the World War.

I have cited these examples of medical progress in the first World War to show that the medical profession was caught napping at the outset. They were far behind the magnitude of the great war in both methods and equipment. They did not understand *what* war would bring that peacetime does not. That is not the case in the present conflict. They were not ready, and it was not until after the close of the war that many life-saving discoveries were made. We are ready and we are already saving lives in methods advanced over those of our enemies. As one example I mention blood plasma and blood banking.

I should like to discuss with you for a few min-

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utes the duty of doctors in the present emergency. First of all, the army and navy need surgeons by the hundreds to keep up with the ever-increasing incoming troops. So, I say, if you're young enough, get in now.

As one meets and talks with doctors, he is impressed with the burden that is being placed on the shoulders of the doctors who have *not* gone into the military services. Everywhere it is found that as the younger men have gone into the army or navy, the older doctors have been taking on additional responsibility and additional work of all kinds. The doctor in civilian practice will have responsibilities thrown upon his shoulders, not only for the care of the sick civilian population in greater numbers than ever before, but also he will have the care of the indigent, leadership in civilian defense and the maintaining of health standards in his community. A further burden he will be asked to carry if it becomes organized and functioning, will be the rehabilitation of the men who were turned down by the Selective Service on account of physical defects which are remediable. He will have to play an important role in rehabilitating these individuals.

It is very gratifying, indeed, to observe how willing and anxious doctors under the age of forty-five are to volunteer and to get into active service. Almost to a man they seem desirous of going, and when their applications for active duty are not acted upon quickly enough, they seem to resent their being held back. All credit should go to these younger doctors for their desire to serve their country. It will be that their income, in most cases, will be materially reduced and many of them are fearful that on their return to civil life their practices will be gone. This, however, was not the experience in the last war. Also, these men are going with a good and brave heart. Service in the Army does not imply freedom from danger and even death. The Medical Corps in the last war suffered a very large number of casualties, larger than any other special service, so that the younger doctor with combat troops going forth to war, risks injuries which may be even fatal. However, as with all young men who are going into the Army, they are accepting this contingency with the thought that if anything does happen to them they are doing it to preserve a way of living which entitles them, their families, and all Americans to freedom of thought and action.

While there is generally a considerable cut in income when a doctor enters the armed forces, he is by no means deprived of good support for his family, and his rank is one of respect and dignity. The doctors nearing middle age are, of course, eligible for higher commissions than the younger men, but advancement comes fast, especially in the Army. With Naval appointment come greater responsibility and slower advancement.

In the smaller communities the doctor is the civilian defense leader, and should be, for he is among the best educated men of the vicinity, and his experience in dealing with people generally fits him for a good leader of the civilian population and a public figure in time of emergency.

I urge you as medical men to seek the responsibilities in your community that best suit your ability. It is bound to mean a sacrifice in time, and probably in financial return, but it is our duty as physicians to exercise our unique abilities for the good of our fellow men, especially in a time of national emergency.

I am convinced that when this war is over, and having been weighed in the balance, will *not* have the time of readjustment is at hand, our profession, been found wanting.

THE CARE OF THE MENTALLY ILL IN A GENERAL HOSPITAL*

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The purpose of this paper is to present the problem of caring for the mentally ill in a general hospital. I will attempt to review the problem from an historical standpoint, as well as relate to you statistics and discuss reasons why individuals as well as the hospital, the community and the State will profit by the inclusion of such a unit in its organization. Some of the material herewith contained was taken from a most comprehensive monograph—"The Care of the Psychiatric Patient in General

*Read at the annual meeting of the Medical Society of Virginia, at Roanoke, October 5-7, 1942.

Hospitals" by Franklin G. Ebaugh, of Colorado.

The care of the mentally sick in a general[1] hospital dates back to 1755 when the Pennsylvania Hospital in Philadelphia was established. In this hospital there was a department for "cure and treatment of lunaticks". Until very recent years, however, few general hospitals have established separate departments for the handling of psychiatric problems arising in that hospital and in the community. Virginia at present has two hospitals offering this service—one at the University of Virginia and the other at the Medical College of Virginia in Richmond. In 1908 the New York Hospital made provision for psychiatric patients by including a separate department and building in its facilities and since 1932 it has been rendering extensive service through the Payne-Whitney Clinic of the New York Hospital. Bellevue Hospital in New York City and the Albany Hospital in Albany, N. Y., the Henry Ford Hospital in Detroit, the Strong Memorial and Municipal Hospital in Rochester, the Massachusetts General Hospital in Boston, the Cincinnati General Hospital, the Los Angeles County Hospital, the Cook County Hospital, the John Sealy Hospital at Galveston, the psychiatric unit at the University of Colorado, and the two psychiatric units in Virginia are notable examples of the march of progress in the field of psychiatric service in general hospitals.

A factor which has thwarted somewhat the development of psychiatry in general and the care of mental patients in a general hospital is the attitude and concept of the average doctor and most laymen to the subject. When a mental case is mentioned, they think immediately of an individual who is maniacal, crazy, or insane—someone who is combative, destructive and noisy. The erroneous belief that a mental diagnosis attaches stigma to the patient and to his family is a barrier which can be overcome only by education. Recently, I heard a prominent physician, in discussing the psychogenesis of illness, say: "That's monkey business."

Psychiatry is intimately concerned in every disturbance to which the human body is heir, whether it be anatomical, physiological or psychobiological. We must determine, if possible, not only how a person behaves, but, if possible, why,—whether the condition be largely an organic reaction type of psychiatric disorder, or whether the condition is a psychobiological one. A complete study of the soma as well as the psyche is carried out by competent psychiatrists. A good psychiatrist must be a relatively good physician,—certainly he should be able to recognize physical disorders and call in the proper consultant. Not infrequently, the internist and surgeon devote too much attention to the organic factor of disease and neglect that phase of the condition which deals with the individual as a whole. In other words, the total personality is frequently not given adequate attention. On the other hand, many psychiatrists pay too little attention to the organic component of mental disorder. Psychiatry must be looked upon as a fundamental of general medical practice. In the Medical College of Virginia, both in the College and Hospital Departments, neuropsychiatry has been made one of the five major subjects and now ranks in importance with medicine, surgery, pediatrics, and obstetrics. Many patients admitted with a physical diagnosis in general hospitals are not known to be psychiatric patients at the time of admission, and in many hospitals they would be refused admission if their true condition was recognized.

Heldt has found that from 12 to 20 per cent of all patients admitted to a general hospital will be found to present conditions and problems that are primarily neuropsychiatric regardless of the patient's complaint or of the diagnostic impression when first examined. If mention be made as well of all cases showing secondary and minor disturbances of the nervous organization, then the percentage promptly rises to 30 per cent, and even higher. No less of an authority than Louis Hammon, that internist of renown, said that no physical basis could be found for the complaints of 60 per cent of his patients. Strecker estimates that 75 per cent of patients consulting the general practitioner consist of (1) neuroses, (2) organic disturbance complicated by neurotic conditions, (3) psychopathological complications of chronic organic disease, (4) the mental aspects of convalescence, and (5) partial or complete psychopathological problems in children. We must conclude that you have a psychiatric problem in your hospital whether you desire it or not. Unfortunately many of these conditions are treated without any consideration for the psychiatric issues.

Hamilton in 1939 was able to list 37 general hospitals with psychiatric facilities, with an additional six Veterans Administration Hospitals.

It is important to educate the administrative, medical, nursing, clerical and other personnel of the

hospital concerning their attitude toward the department of psychiatry. Many of them refer to it as the "nut department", "crazy floor", etc., and do not discriminate to whom they pass such remarks. Whereas, it will probably be a long time before this practice and attitude will be discontinued entirely, it should be discouraged, and everyone should be informed as to the real worth of the department. This attitude very likely will change, in time, as it has in general hospitals with such departments long established. Nurses and medical men, as well, often discuss the question of stigma which is attached in the minds of many to any type of mental illness. It should be remembered that the treatment of mental disorder is on a rational basis, such as is any medical or surgical illness. It is this very stigma that has been an important factor in permitting the neglect of so many cases if allowed to become chronic, and it should be impressed upon all who have anything to do with mental sickness that a mental disorder is just as truly an illness as is appendicitis or pneumonia.

A frequent objection to the psychiatric patient is that they are noisy. I dare say that there is less noise in the average well ordered psychiatric unit in a general hospital than there is in the medical or surgical ward. Occasionally over-active, maniacal, or delirious patients will be disturbing for a time, but, more often, they are quieted within a few hours—and usually without the use of drugs. If sedation and relaxation cannot be accomplished in a reasonable length of time the patient should be transferred to a strictly mental institution whose facilities for taking care of such patients are more adequate.

A question frequently raised is—"in what way are we able to hold a mental patient against his will?" With a few exceptions, all of our patients have been voluntary. Some of them object to the so-called confinement and the necessity of the occasional locking of a door, but most of them are soon contented and cooperative in their treatment, and are well pleased with their surroundings. Occasionally a disgruntled patient will demand his release—which is always given when reliable persons assume the responsibility for them. Not infrequently a patient will have to be literally made to go home.

A mental patient may be legally committed to a psychiatric ward of a general hospital where he may be observed and treated for a limited time, but we do not encourage this procedure. The psychiatric ward of a general hospital may be utilized for the observation and diagnosis of a suspected mental malady, thereby preventing the patient from being subjected to the incarceration in a jail hospital or to be committed to a mental institution without sufficient observation. By this procedure legal commitment may be made necessary.

The value of a psychiatric unit in a general hospital to medical and nursing students is considerable. Henry has expressed the opinion that no medical student should be graduated without having taken a course in the psychiatric aspects of general hospital practice. Harrison Ford emphasized that psychiatry should be taught not because of the small percentage of the physician's patients who will be psychotic, but because 30 to 65 per cent of the symptoms presented by his patient will require understanding in this field. When a hospital accepts an interne it assumes a definite duty as to the education of that individual which it cannot properly discharge unless it provides them with an opportunity to understand and treat many of the psychiatric problems. It has been my observation that the interest of the student nurse, the medical student, as well as the interne, has been materially increased in psychiatry since we have had adequate teaching material in a department properly operated for instruction in this subject. At present, many of our internes are eager to work on this service, and the students almost without exception are showing a remarkable interest in the subject. This was certainly not true until a psychiatric unit was established in our teaching hospital. On the other hand, psychiatry has profited considerably by being included in the activities of the general hospital. Also, it has become clear to many of the skeptical in other branches of medicine that they and their patients can profit by the early recognition and treatment of psychiatric disorders. It can be demonstrated that psychiatry is not the sterile subject that it once was, and as many in the other specialties of medicine still believe it to be. Modern therapeutic methods, such as malarial and shock therapy, as well as sedation of patients without drugs have proven their worth.

A tremendous increase in chronic psychiatric cases has been recorded in recent years, and it is believed that had many of these not been neglected and had

had the opportunity of psychiatric care at an early stage of their illness, they would never have reached the stage of chronicity. It has been often said that there are more individuals occupying beds in mental hospitals today than there are sick persons in hospitals for every other reason, including tuberculosis. It has also been said, statistically, that insanity has been increasing for the past fifty years about three hundred times faster than the population, but these statistics are not so alarming when they are correctly analyzed and properly interpreted. The increase in insanity is due to a number of facts, as (1) diagnosis of mental and nervous diseases is more critical and discriminating; people are being called insane today who formerly had some other diagnosis; people who were formerly regarded as queer are now definitely diagnosed as being psychotic; (2) It is easier to count those who are mentally sick today, for the reason that there is a greater tendency to place the milder types of psychoses in institutions than there formerly was; (3) the life span of an individual has greatly increased in the last fifty years; more people now live to reach the age when certain types of mental breakdowns occur. There has been an increase in the urban population, and it is an accepted fact that neurotic individuals break down more frequently under the pressure of urban life than when living in the quiet countryside. Something more must be done than has been if we are to reduce the frequency and duration of mental illness. Why will not a psychiatric unit in the general hospital help accomplish this end?

There is a need for the development of psychiatric units in general hospitals in every city of over 50,000 population. What justification is there for the name "general hospital" unless it receives patients suffering with every type of malady? I trust that I will be able to show that the hospital as well as the patient will profit if all large general hospitals will care for the mentally sick as well as the physically sick.

I would like to tell you something of the operation of the psychiatric unit in the Medical College of Virginia Hospital. The new hospital in our medical center, known as the Medical College of Virginia Hospital, was opened for white patients in the late winter or early spring of 1941. Because we were unable to procure a sufficient number of properly trained psychiatric nurses and attendants at that time, we were unable to open this department until July 1, 1941. At this time the women's division received its first patients, and in September of that year the men's pavilion was opened. The hospital, built in the shape of a cross, is ideally situated for the segregation of psychiatric patients. In one wing, there are three rooms of four beds each, a large hall, nurses' office, and examining room, as well as a large day room for women patients. In another wing there is a similar arrangement for men patients. In another wing, there are ten private rooms, most of which have private baths for patients desiring this type of accommodation, and in the other wing there are rooms for disturbed patients, the men and women being well separated, and there are four tubs for continuous flow baths, all of which are automatically controlled.

Our staff consists of the head of the department, an assistant who devotes his entire time to the patients, to the teaching of students, and to research, and as chief of the clinic in the out-patient department for ambulatory neurological and psychiatric patients. There are a half dozen visiting psychiatrists who are relatively active in the wards and in the out-patient department. These physicians have the privilege of treating patients in the several pavilions in the hospital. Our organization calls for a resident who has had experience in psychiatry, an assistant resident, a senior and first year interne who rotate among the services in the hospital. We have a psychiatric supervisor of nurses, a head nurse in each pavilion, and trained psychiatric nurses in each pavilion. The number of maids and orderlies are maintained according to the usual standards. It so happens that, at present, our nursing and medical staff is under-manned because many of them have been called into the service, and others have gone into more lucrative fields. All of our graduate nurses have had psychiatric training, and a certain number of student nurses in the hospital are given this training for a time during their course. There is no provision made for a psychiatric unit for colored patients at this time, but the use of the Dooley Hospital, one of the buildings in the medical center, is contemplated for the care of these patients.

Due to our limited number of beds and to the fact that our hospital is a teaching one, it has been our policy to accept only the relatively acute psychoneurotic and psychotic disturbances, and particularly those whom we feel will be benefited by a rela-

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tively short stay in the hospital. Almost without exception, we refuse admission to chronic deteriorated mental cases. Occasionally a mental illness of long standing will be accepted for a limited length of time so that the patient may be committed to an institution or if the family or physician desire, the patient may be accepted for complete study so that the family may be satisfied that the patient very probably has an incurable malady or one which will be long standing. Disturbed patients are occasionally accepted, but because of our limited accommodations for this type of patient, we are careful in their selection. You will see, therefore, that the majority of our patients are the more profound of the psychoneurotic, and the milder of the psychotic cases. We attempt to distribute the type of case so that the student will get experience with a wide variety of cases.

Every patient is thoroughly studied from the physical, neurologic, psychiatric, psychological, sociological, and laboratory standpoint. Staff conferences are held regularly by the medical staff with students, social workers, psychologists, and certain nurses.

The equipment of the department is complete. It consists of, in part, fever therapy, hydrotherapy, physiotherapy, occupational and recreational therapy, as well as electro-shock and electro-encephalographic equipment.

The psychiatric department occupies the entire seventh floor of the hospital. Very soon we will move our out-patient department for ambulatory psychiatric and neurologic patients to the seventh floor of the Clinic Building, which abuts the hospital building. The occupational and recreational departments will likewise be housed in the Clinic Building on this same floor. We will then have the whole department on contiguous floors of these abutting buildings.

It is our policy to give practically no drugs for sedation. Fewer sedative drugs are used, probably, in this department than in any other in the hospital. It is seldom that strong sedation is used to quiet even the most disturbed patient. Continuous warm baths, sedative packs and the various shock therapies will usually suffice.

There is no question about the fact that a general hospital staff is quite helpful to the department of psychiatry. Expert consultants in every phase of medicine and surgery are easily available and the task of eliminating certain physical disorders is therefore simpler. On the other hand, the number of requests for consultation by the department of psychiatry has gradually risen, and it is believed that the medical service has derived some benefit from having a department of psychiatry in the same hospital. Disturbed patients can be taken to that part of the psychiatric pavilion provided for the care and handling of such cases, and problems which are disturbing to the medical man or surgeon can often be easily handled with the proper supervision.

In conclusion, I would like to say that I feel that a psychiatric department should be a part of every large general hospital. It is surprising what good results are obtained in early cases and how many individuals are prevented from having to go to mental institutions for long periods of time on account of having had adequate treatment early in a psychiatric unit of a general hospital.

Professional Building.

REFERENCE

1. Published by American Hospital Association, 1940.

DISCUSSION

DR. J. ASA SHIELD, Richmond: Dr. Gayle has brought to us a very timely subject and certainly one that has been impressed upon us who have had the opportunity at the various induction stations to examine the men who are going into the Service. It has been rather surprising to see the number of people with nervous and mental disabilities coming into these induction stations to be inducted into the Army. The rejections have been very high. As we know—in Virginia—in some months and in some of the stations, the rejections have been as high as fifty per cent for all the various kinds of disabilities; and in one month, at the station in Richmond, the rejections for nervous and mental disabilities happened to be 34 per cent of all the men who came. That was very high—the average being around 20 per cent. So we have this problem, whether or not we are prepared to take care of it.

Some years ago, at the Medical College of Virginia, we went over the records of all the patients admitted to the medical ward. Of that group, we found, to be exact, 18.2 per cent with psychogenic disturbances but whose complaints caused them to be classified as medical and admitted to that ward. The psychiatric department at the hospital is certainly a much needed one. The advantage of this department is for both the patient and the doctor, because you have a personnel trained to understand these people, trained to help them, and trained to carry out the therapeutic regimen planned by the physician. The nurses and even the attendants understand these people, and they do not say things or do

things that upset them as sometimes happens to these individuals on the general hospital floor. So the patient is better by having the department, and it is easier on the doctor—and the important thing is that the patient gets well more quickly.

Dr. Gayle suggested that psychiatry had been considered a sterile subject years ago, and I think to a certain extent the criticism of psychiatry and its treatment years ago was justified. He spoke about the first psychiatric department having been established in Philadelphia in 1755. That has been a long time and there was little progress made, we might say, until the latter part of the last century. But certainly in recent years there have been very marked developments in treatment. For instance, in 1917 Wagner von Jauregg introduced fever as therapy for neurosyphilis. Then there was also developed, in Vienna, insulin treatment. Then the convulsive treatment was first developed in Budapest by Meduna, and more recently electric shock has been introduced. The evolution of psychotherapy has enabled the psychiatrist to reconstruct personalities and straighten out their difficulties in a much more effective manner with the recent understanding of psychobiology and our greater understanding of psychopathology. Thus it follows that the mental and physical care of the psychiatric patient has evolved rapidly along therapeutic lines.

These various therapeutic procedures are made available in specialized hospitals and in specialized wards in general hospitals where there is a staff trained to take care of the nervous patient.

In the Medical College of Virginia Hospital it is also a great adjunct in the teaching of students to have this department there.

I enjoyed Dr. Gayle's paper very much and want to thank him for bringing this subject before the Society.

DR. BEVERLEY R. TUCKER, Richmond: It is very hard, Mr. President, for one to discuss a paper with which one agrees. I have run, I suppose, the whole gamut of the prejudices that have arisen in the treatment of the mental and nervous case. Unfortunately, the word "psychiatry" has carried in the mind of the layman a kind of stigma, I think, and that has put us on the defensive. We are on the defensive this morning. I could show you many letters from doctors presenting patients, saying: "I know nothing about mental and nervous diseases and I do not want to know, and, therefore, I am sending you the case." That is not very complimentary either to the man to whom the case is sent nor to the man sending it. To take that attitude is very discouraging. Not long ago I had a patient, and a member of his family wrote me he was sorry for his relative to be in a nut house and to be insane, and he thought it was a disgrace and he did not understand why that should be inflicted upon him, and so forth; and also that people ought to control themselves and not get insane. My answer to him was very simple; I said: "Just judging from your thought processes and the kind of intelligence you show and your prejudices and the fact that insanity is in your family, I think there is something wrong with you, and you ought to get treatment."

The old attitude is, however, gradually changing. There is no more disgrace in being sick in your brain than in your stomach or your liver or your rectum. You are just simply sick. There is no reason why psychiatric cases should not be treated in the general hospital. We have a private hospital of our own, not because we wanted it. Nobody wants to run a small hotel or boarding house and practice medicine at the same time (and that is what I have been doing for a number of years), if he can get adequate accommodations in a general hospital. A great many hospitals now are giving somewhat adequate accommodations. This whole question is being cleared up, but I tell you it has been a hard fight against prejudices. We tried for a number of years to get a small ward established in the Memorial Hospital in Richmond—tried to get twelve beds. As Dr. Gayle pointed out, a man is a better practitioner of medicine—better in any line, whether he be an obstetrician or pediatrician or even a dermatologist or a proctologist—if he understands psychiatric conditions. Often the mental and nervous processes of these patients carry them into a state in which they appear to be much worse off than they are.

I wish to emphasize one other thing Dr. Gayle mentioned, and that is that some of these patients can be treated without sedatives. We have to treat nearly as many of these patients for the drugs the doctors have given them as for the disease itself. Often the drug bill is bigger than the doctor's bill. They are poisoned with opiates and sedatives, barbitals, even estrogenic substances, and vitamins.

I think Dr. Gayle has made a contribution toward the understanding of psychiatry which we ought to bear in mind.

DR. GAYLE, closing the discussion: I should like to thank Dr. Shield and Dr. Tucker for their discussion of the paper and I wish to stress the point that I made in my paper and which was emphasized by Dr. Tucker as to the use of sedative drugs. We probably give less sedative drugs than most any department of the hospital, and we are usually able to sedate even our most disturbed patients with continuous flow baths, packs and other hydrotherapeutic measures and modern shock therapy.

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ROENTGEN THERAPY OF BRAIN AND SPINAL CORD TUMORS IN CHILDREN*

F. B. MANDEVILLE, M.D.,
Richmond, Virginia.

During the past seven and one-half years, we have had the opportunity to administer roentgen therapy and observe the course of 136 cases with a diagnosis of tumor of the brain or spinal cord, at the Hospital of the Medical College of Virginia and the Neurosurgery Service of Dr. C. C. Coleman. Twelve years ago, with Tracy,[39] we reported favorably on the roentgen therapy of a small series of cerebellar medulloblastomas. In 1941, with Russell and Farley,[26] we reported the first 100 cases of this series. Listing those patients 18 years old and under as children, we found 78 adults and 58 children. The tabulation follows:

136 TUMORS—78 ADULTS, 58 CHILDREN

Medulloblastoma	6	13
Pontine Tumors	5	7
Craniopharyngeoma	1	7
Pineal—3rd ventricle	1	5
Ependymomas	3	2
Astrocytomas	5	1
Unclassified tumor	2	7
Astroblastomas	1	1
Glioblastoma mult.	8	1
Spongioblastoma bip.	0	1
Hemangiomas	8	1
Metastatic	3	1
Spinal cord tumors	13	9
Retinoblastomas	0	2
Sarcomas	5	0
Hemangioblastoma	3	0
Pituitary tumors	12	0
Meningeoma	2	0

The incidence of brain tumors in children with Bucy's figures[8] modified slightly for clarity showed approximately:

Astrocytoma, unilateral in cerebellum	20-25%
Medulloblastoma, midline in cerebellum	20%
Pontine Tumors	15-20%
Craniopharyngeomas	15%
Pineal and posterior 3rd ventricle	5%
Ependymomas, of 4th ventricle	7%

ASTROCYTOMA

The astrocytoma is a common tumor of the cerebellum in children, which is relatively benign and well circumscribed and can be removed by neurosurgery with a very low mortality rate. When completely removed it does not recur and the patient is permanently cured. Roentgen therapy is used only when the tumor is incompletely removed. Of six cases with incomplete removal only one was in a child, a white female aged six years, with a unilateral cerebellar astrocytoma. She was living and well and making good grades in school, 5 years and 8 months after operation and roentgen therapy.

Astrocytomas occur in the cerebrum as well as in the cerebellum, and occasionally are pontine. They are protoplasmic or fibrillary. At least six papers reviewed favored radiation in the protoplasmic group, but only one, that of Deery,[14] irradiated the fibrillary type. Deery found microscopic changes in two or three fibrillary astrocytomas following irradiation, which he attributed to the action of the roentgen rays.

The four patients we have traced were living, and we have not found evidence sufficient to cause us to refuse treatment when these tumors have been incompletely removed, although we are aware of the many statements in the literature against the use of irradiation in the fibrillary astrocytomas.

In the typical unilateral cerebellar tumor in a child the plain roentgenograms of the skull show the sutures separated, the sella turcica is enlarged and the clinoid processes are eroded, convolutional markings on the inner table of the skull are common, and the cerebellar fossa may become enlarged due to the bulging and thinning of the suboccipital region. Clinical signs of a predominantly unilateral cerebellar lesion are usual.

MEDULLOBLASTOMA

Of 19 verified medulloblastomas, 6 were in adults and 13 in children. All the children's cases were cerebellar. There were 10 males and 3 females, 11 white and 2 colored, aged 2 to 17 years.

One female is living and well five years following partial removal and 5 series of deep x-ray treatments, to four skull portals and two long spinal portals, one series in 1937, two in 1938 and two in 1941, using 200 K.V. in the first four, and 400 K.V. in the last series. A second operation in the

*From the Department of Radiology, Medical College of Virginia.

early part of 1942 revealed no evidence of tumor cells and the patient has entered college. Counting six portals, the skin received a total of 19,624 r and the air dose was 14,300 r. The tumor dose was certainly above 4,000 r but the intervals between treatments should be kept in mind, as they were too long.

Three of our patients lived over four years and then developed spinal cord metastases although all had careful irradiation of the entire cerebrospinal axis in an effort to prevent such occurrences. In one case in which the cerebellum received a tumor dose of 5,763 r no tumor cells were found in this region at necropsy, but the spinal cord, treated with a tumor dose of 4,261 r, showed living neoplastic cells. Here, again, the intervals between treatments were too long to have the total tumor dose mean anything.

In a review of the literature, fifteen authors were found who regarded these tumors as radiosensitive and only Davis and Weil[13] mentioned radioresistance. The overwhelming opinion favored radiation therapy as an adjunct in their treatment, with some difference of opinion as to whether biopsy only should be done or partial or complete extirpation should be attempted. We do not believe that roentgen therapy should be given until suboccipital decompression and biopsy have been completed.[39]

PONTINE TUMORS

Of 12 cases, 5 were in adults and 7 in children. The ages of the latter were 3 to 10 years, with 4 females and 3 males, 5 white and 2 colored. Pontine tumors constituted a most unsatisfactory group, because operative and microscopic verification was usually impractical. The lack of response to radiation treatment would bear out the fact that these tumors are invariably one of three types, namely, glioblastoma multiforme, spongioblastoma polare or resistant astrocytomas.

Six of the seven children are known to be dead and their average life after treatment was 5 months. One white male, aged 10 years, received a tumor dose of 5,211 r in three series of treatments, given at short intervals. In spite of our best efforts in planning roentgen therapy and his complete cooperation, he lived only 12 months.

CRANIOPHARYNGEOMA

In view of the inability of the most experienced neurosurgeons to remove these frequently partly calcified suprasellar tumors and cysts, we believe in following Frazier[20] and give these patients any benefit which might obtain from such roentgen therapy.

Of 8 cases, 7 were in children aged 4 to 18 years. Four were males and three females. Five were white and two colored. One white male is living 6 years following surgery and roentgen therapy. One child was untraced but the others were living when last heard from. Only two, however, have received tumor dosage above 3,500 r.

Upon purely hypothetical reasoning, that radiation might destroy or inactivate the epithelial cells lining the cyst, Frazier[20] collected a group of children under observation in whom by this combination of treatment the symptoms appeared to be arrested. We still cannot see how the fatalistic attitude expressed in most papers will ever lead to sufficient trial of radiation to yield the data needed to determine its efficacy in this group.

PINEAL REGION TUMORS

Of six cases with tumors in the posterior third ventricle and pineal region, five were in children aged 2 to 16 years, two were in males and three in females, and one was colored and four were white.

One ten year old white male with a microscopically verified pineal ulcer, lived only 7 months following two series of deep roentgen treatments with a tumor dose of 3,112 r.

Four unclassified tumors of the posterior third ventricle were living when last contacted. One white male, aged 10 years was living 5 years and 3 months when last contacted. The tumor was seen at operation but no biopsy was made.

We have observed calcification in these tumors and have films before and 9 months later following a tumor dose of 3,851 r.

We believe roentgen therapy should be given a thorough trial in this group of tumors.

ASTBOBLASTOMA

There were two cases of astroblastoma in white males in our series. One, in a boy aged 4 years, was living 2 years and 6 months after partial removal of a tumor in the region of the third ventricle and three series of roentgen treatments with a tumor dose of 3,412 r. The adult case was also living when contacted recently. It is interesting to note that Frazier[21] and his collaborators, after studying their pooled cases of brain tumors, devote one sentence to this subject, as follows: "A few astroblastomas were irradiated but the number was so small that no conclusions could be drawn con-

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cerning them." We were therefore forced to follow the advice of Bailey, Sosman, and Van Dessel[5] who say: "Although there is no conclusive evidence from our experience that these tumors are influenced by irradiation, we should think it advisable to give a course of treatments after operation because these tumors contain fairly numerous mitotic figures and are liable to recur."

EPENDYMOMA

Before discussing our small group of 5 ependymomas, we wish to again emphasize that the operative notes suggest that the tumors were incompletely removed. Only two cases were in children.

One white female, aged four years, with a classical cerebellar fourth ventricle lesion, received five series of treatments in a one year period as planned, with a tumor dose of 7,548 r. She lived 6 years and 6 days following her operation. A white male, aged four years, also with a cerebellar lesion was living 8 months when last heard from.

A young adult male with a tumor involving the right lateral ventricle, running through the foramen of Monro into the third ventricle, received a tumor dose of 3,942 r to the brain and 2,118 r to the spinal cord in three series of treatments. He was living and well and had married and raised a family 6 years and 5 months following operation. The unconventional irradiation to the entire cerebrospinal axis was based on the extent of the tumor, its location, and the fear of implantation metastases. Weaver, Dercum and Spiller[38] reported such occurrences between 1898 and 1907, and more recently Kernohan has brought up the subject. We realize the wide divergence of opinion concerning the value of irradiation in these tumors. Two important authorities discouraged therapy, but six equally authoritative publications were favorable to it. We admit that these lesions are usually relatively benign, but question the wisdom of assuming that tumors incompletely removed are or will remain non-malignant.

GLIOBLASTOMA MULTIFORME

Of 9 cases of glioblastoma multiforme, only one was in a child, a white male aged 11 years. He lived 7 months following partial extirpation and 3 series of deep x-ray treatments with a tumor dose to the right temporal lobe of 5,486 r.

In six adults who died, the average length of life was 6½ months following operation, which checks remarkably well with the 7 month survival of our single child. In one adult case studied with pre-irradiation and autopsy specimens, following a tumor dose of 3,172 r given in one series, post-irradiation autopsy specimens showed many tumor cells present. Since necrosis and hemorrhage form an integral part of these tumors, it is impossible to determine accurately the part played by tumor growth and that due to irradiation.

Irradiation does not appear to be of any value in the treatment of these tumors.

SPONGIOBLASTOMA POLARE

Only one example of spongioblastoma polare occurred in a white boy aged 14 years, who had a partial excision of an occipital lobe and a tumor dose of 1,425 r. He lived only ten months following operation, and his course was rapidly down hill. We found only one favorable report in the literature and two very authoritative opinions unfavorable to irradiation, with which our experience is in agreement.

HEMANGIOMA

Of 9 cases only one was a child, a white female aged 4 years, who was treated only one year ago. Our adult cases have yielded very unsatisfactory results but we have never had the opportunity to administer adequate tumor dosage due to the patient's failure to cooperate. We have found a few reports in the literature favorable to irradiation.

UNCLASSIFIED TUMORS

From the therapeutic standpoint this was a most unsatisfactory group of tumors, but we wish to record that such a group did exist in this series. Two children aged 13 and 16 years had cerebellar lesions which were undoubtedly medulloblastoma and they had not reached the four year survival period. There was a glioma of the optic chiasm in a boy aged 10 years. Unclassified gliomas of the cerebral hemispheres made up the other cases.

RETINOBLASTOMA

We have had two cases in negro infants, both with microscopic verification. One lived one year with recurrence following a skin dose of 5,400 r given in 100 and 200 r doses in a 40 day period. The tumor disappeared following therapy. A second case, a female aged 4 years, had a skin dose of 5,120 r to the tumor and skin dose of 2,490 r to metastases in both femora. Both these tumors were treated with 400 K.V. apparatus. No permanent

beneficial results were expected. Both tumors responded immediately to the heavy dosage and as the lesions were superficial the skin doses approximated the tumor doses.

SPINAL CORD TUMORS

Of 22 tumors, 13 were in adults and 9 were in children. We have children with unclassified gliomas living and well 5¾ and 4½ years following operation, a female with hemangioma of cord 5½ years after operation. Two unclassified gliomas are living over one year. One medulloblastoma of the cord is dead. At autopsy no tumor cells were found in the brain. An ependymoma and two unclassified gliomas are living less than one year.

The three children living and well from 4½ to nearly 6 years, and an adult who recently called to see us with a 4 year survival, make our efforts in the treatment of these tumors seem very worth while.

DISCUSSION

It should be noted from the tabulation of cases given at the beginning of this paper that no cases in children occurred in this series of pituitary adenoma, sarcoma, reticulum cell sarcoma, and meningeoma. We found roentgen therapy to be of definite value in the treatment of both chromophobe and chromophile pituitary adenomas in adults. Our two cases of reticulum cell sarcomas, differentiated from medulloblastomas by the use of Foote's silver stain, occurred in male adults and the one case traced lived only 10 months, which confirms Bailey's view[6] that these tumors are resistant to radiation. The hemangioblastomas, meningeomas and sarcomas which were incompletely removed and therefore subjected to irradiation also were found only in adults in our series. We believe all the above to be radio-resistant but we most definitely would treat these incompletely removed tumors, notwithstanding advice to the contrary in the literature. We have seen a hemangioblastoma, partially removed on two occasions, grow with alarming rapidity, and we have treated the patient following a third operation, so far with no recurrence. Meredith reported a case of meningeoma which microscopically appeared to be very benign but which recurred in a very malignant manner. It would, therefore, appear wise, in our opinion, when the tumor has been incompletely removed to administer roentgen therapy.

We are not advocates of roentgen therapy for metastatic tumors of the brain, but when no primary site is found and the microscopic diagnosis is equivocal, we do not hesitate to irradiate until more adequate diagnosis is forthcoming.

ROENTGEN TECHNIC

The technic of treatment of brain and spinal cord tumors was outlined in detail by Mandeville, Russell and Farley[26] in 1941. No changes in treatment have been made since then.

SUMMARY

1. Of 136 cases of brain and spinal cord tumors referred for roentgen therapy, 42.6 per cent occurred in children.

2. Serious attempts were made to treat tumors known to be radio-resistant which had been incompletely removed surgically.

3. The medulloblastoma was the tumor most favorably influenced by irradiation.

4. Glioblastoma multiforme and pontine tumors were completely resistant.

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BATTLE CASUALTIES ON THE HOME FRONT*

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You may have heard we are at war. It is a total war—a war for survival—a war in which we may lose our lives, or even worse, the things which make life worth living—a war being fought with words and emotions as well as bullets and bombs. To win this war losses are inevitable. It is our duty to hold these losses at a minimum.

With this in mind, it seemed timely to review the situation on the home front and bring up for discussion a few of the problems that might be met by the medical profession.

In army terminology, a casualty represents a

*Read before the Roanoke Academy of Medicine, on November 2, 1942, when the author assumed the office of President.

man put out of action. In the eyes of the enemy, maiming or wounding is often preferable to killing. A dead soldier needs no attention but a wounded soldier must be treated, fed, and transported. This uses up time, equipment, and material which otherwise might be expended in fighting force. Since this is primarily a war of production, a casualty at home that delays or limits delivery of vital equipment to the front may give more aid to the enemy than the death of a soldier in battle.

Casualties on the home front may be classified as inevitable and potential.

There is no need of discussing here the usual industrial injuries. The increase in those resulting from hurry, insufficient training and experience, slowed reflexes from loss of sleep, fatigue from long hours on the job, and similar causes is the inevitable result of war and preparation for war. It appears that a maximum effort toward holding these at a minimum already is being made.

Some of the potential casualties are not so clearly defined nor as easily treated. Those which are tangible perhaps offer less difficulty, so a few of these will be mentioned first.

This war differs from those of the past in that military action is not limited to battle fields. The doctor at home may suddenly find himself in the midst of military action and be called on to treat any wounds encountered at the front, including gas poisoning, burns, and shock. All this is in addition to his usual duties and calls for a review of first aid and military surgery.

The father working at top speed in essential war industry who cracks up when he hears his son has been killed in action is as much a casualty as the son. We all may meet cases in this category and need to handle them as best we can without the services of a competent psychiatrist.

Some patients most probably will lose their lives because the specialist who might have cured them has been assigned to military duty. Others may die because medical attention is too long delayed or inadequate when it arrives. Some possibly may not be able to obtain any kind of medical service. To prevent casualties of this type, specialists are being urged to refresh themselves in other lines and all doctors are asked to systematize their work so their time and services will reach as far as possible. The public has been asked to cooperate and is doing so beautifully.

Despite all this the doctor may find himself on the casualty list. Many at home have reached the usual retirement age and are being called on to do more than they did in their prime. Others are suffering from physical handicaps and are carrying on against heavy odds. It is essential, therefore, for the doctor to meticulously guard his own health and each must be his own judge of what constitutes his maximum capacity. His fellows should refrain from carping criticism, certainly until the facts are known.

All of us are aware that the casualties previously mentioned can and probably will occur. Although the odds are heavy we feel somehow the strength and ability will be found to meet them when it is necessary.

Above and beyond these physical casualties there is another type, intangible, hard to define, and hard to recognize. War does something to peoples' minds and emotions. It could hardly be called a fear psychosis, and yet, reduced to its last analysis, fear does appear to be a major factor. The President even mentioned freedom from fear as one of the four freedoms for which we are fighting. On the other hand, it is a logical and perhaps necessary emotion. Fear of pain and fear of death lead us to protect our health. Fear of punishment in this world or the next influences many of our actions. Fear for our children and their future urges us to throw out safeguards for their protection. Fear of slavery makes us fight to the death to defend our freedom.

This could only mean that there are two kinds of fear, one that is wholesome and necessary to our well being, and one that is dangerous and perhaps pathological. The coward is afraid to act, the brave man is afraid but acts anyway.

Physicians, whether they wish it or not, hold an outstanding position in every community. They are given credit with having logical and analytical minds. More than they themselves realize people turn to them when they are afraid. In times like these they often want and need more than physical relief. Few doubt that victory at arms eventually will be ours. A great many fear it will be won at too great a cost in those things we hold most dear. It is our duty as citizens to sit at the consultation table on lay problems, and if we cannot alleviate

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the fears with which we are confronted, at least to be in a position to lend some constructive thought and advice.

The education of our children is a problem in mental prophylaxia. A nation can be destroyed by teaching false ideas to those without knowledge. This is well expressed by Dr. Lancaster, Superintendent of Public Instruction in Virginia, who says: "Knowledge without thought is futile. Thought without knowledge in perilous." Some feel that the movement to revise the system of education in Virginia is an experiment in Socialism and aimed at teaching children to think along these lines before they have acquired a basic foundation of facts on which to build constructive thought.

Although most of us have children in school, few know that Dr. Caswell, of Columbia Teachers' College, has been introduced in public as the father of the Virginia Program of Education. Our state is the first to attempt this program and for the past ten years has acted as a guinea pig. Have we read the textbooks in Social Science now being used in our schools? Are we prepared to express an opinion on the possible results of this experiment? Is it what we need and want, or is it possible we may awake too late and find our children have been "sold down the river?"

Have we read the new Bill of Rights being introduced by the National Resources Planning Board? Among its many Utopian objectives for post-war planning is a government guarantee of adequate medical attention for all.

Another potential intangible casualty is the sense of moral values. To a certain degree this accompanies all wars. This war, it seems to some, was caused by a loss of moral values. It seems to go deeper than just a laxity in morals leading to sexual promiscuity with its usual increase in the so-called social diseases. These are bad but, like drunkenness, have a tendency to correct themselves by visible examples of their own viciousness. This loss of moral perception seems to shake the foundation on which the superstructure of our national life rests. It brings with it loss of confidence in others and then in ourselves. This in turn leads to a state of futility and confusion. To illustrate: When our senators were allowed an "X" card for gasoline on oath that it would be used only for business, volumes were written on the unfairness and injustice of their being permitted to use unlimited amounts of gasoline for any and all things they wished. Not one word was said about how low a social order must have sunk when no one is ready to even intimate that the oath of its leaders can be accepted at face value.

"What shall it profit a man if he gain the whole world and lose his own soul," is not the idle patter of a religious fanatic. Nations like individuals have a soul. It is a source of inner strength. When it is lost there is nothing else that can take its place.

We all feel that a discussion of things pertaining to the soul rightfully belongs in the field of religion. That is true. On the other hand, they are so essential to our individual and national well being that they warrant serious consideration, not only by doctors, but by all thinking men in every community. This is especially so in times of crisis.

A world revolution is at hand. A new social order is being born. There can be no question that some of the things we cherished will be lost forever. Many more can be lost if physicians fail to lift their heads from the sands of purely professional matters and think they are doing their whole duty when they attempt to heal only bodies when the spirit is broken.

Lewis-Gale Hospital.

SUBCORTICAL INTRACRANIAL HEMORRHAGE OF SURGICAL SIGNIFICANCE—with a Report of Eight Cases*

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Introduction: The medical literature pertaining to extradural and subdural (both acute and chronic) intracranial hemorrhage as well as that concerning subarachnoid and deep cerebral hemorrhage (the so-called apoplectic hemorrhage or stroke) is very extensive in the pathological, the internal medical, and the surgical fields. However, the fact that cer-

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tain subcortical clots occur in the brain that are capable of operative attack and cure is only beginning to be recognized, and it is concerning this latter group that this report has to do. Eight cases of subcortical intracranial hemorrhages in the cerebrum, lateral ventricle, or cerebellum will be briefly presented. All these cases were operated upon, and all recovered post-operatively.

There is no pathognomonic clinical syndrome that leads unmistakably to the diagnosis of a subcortical brain hemorrhage of the more or less massive circumscribed type, acting pathologically as would any mass lesion of the brain, and hence a fitting case for surgical relief. Most of the eight cases in this series—as in those reported by other writers on the subject—were operated upon as brain tumor suspects, and only at operation was the true nature of the lesion disclosed. However, Klemme[1] recently reported (1942), in an analysis of twenty-five cases of intracranial, subcortical "surgical" hemorrhages that: In twelve instances, a diagnosis of brain tumor was made pre-operatively, hemorrhage with clot formation was diagnosed pre-operatively in six cases, and in the remaining seven, no pre-operative diagnosis was made.

The apparent rarity of a subcortical brain hemorrhage of surgical significance should be stressed. Until September, 1941, only seventeen cases of this type were reported in the entire medical literature. At that time, Klemme[2] reported six cases (to which he later[1] added two cases) and Pilcher[3] reported eight cases, bringing the total to date, exclusive of those herein reported, to thirty-three cases recorded in the literature.

Kaplan[4] has stated (1937), in effect, that the traditional attitude of symptomatic treatment only in patients who appear to develop apoplectic strokes is, in certain selected cases, entirely wrong, and this view is also stressed by Klemme[1, 2]. Since the introduction of ventriculography in 1918 by Dandy, it is a simple enough matter to determine, by a relatively minor procedure, whether or not there has been a massive hemorrhage capable of surgical attack, although it must be remembered that cerebral thrombosis alone (usually a non-surgical lesion in the present state of our knowledge) is capable, in the first few days after the thrombosis occurs, of distorting the ventricles also, thus simulating a mass lesion of the brain when ventriculography is performed.

Kaplan[4] operated on two patients with large cerebral hemorrhages that recovered; both were apparently moribund on admission; Adson[5] and his colleagues reported a similar case in 1940 in which the symptoms suggested a rapidly growing cerebral glioma in a thirty-eight-year-old woman who was in very poor condition on admission to the clinic. The value of any operation whatever in that case was seriously questioned, but it was decided to verify the lesion, at least, by a biopsy through a burr opening aspiration. In introducing the ventricular needle into the cerebral hemisphere over the site of the suspected "glioma", a large (60 c.c.) liquid blood clot was evacuated and drained, and the patient made a complete and early recovery. These writers concluded that no patient should be refused at least a limited cerebral exploration in similar cases because of the possibility (remote though it may be) of such a completely curable lesion being present.

Ecker and Love[6] reported, in 1939, a case of posttraumatic, cerebral (subcortical) hemorrhage with delayed symptoms simulating a brain tumor that recovered after operation. These authors stated that patients with large cerebral hemorrhages may be divided, according to clinical features, into three groups:

(1) Those in which a sudden cerebral episode occurs, terminating in death within a few hours.

(2) Those in which symptoms last for days or weeks and are largely suggestive of meningeal irritation (with associated subarachnoid hemorrhage).

(3) Those in which many months or even years after a primary episode there is evidence of increased intracranial pressure.

Their patient belonged to the last of the three groups. They gave their patient a course of X-ray treatment after operation as a prophylactic against recurrent hemorrhage (? angioma).

Craig and Adson[7], in 1936, emphasized that spontaneous intracerebral hemorrhage is rather rare but that it has occurred often enough to be of importance in the differential diagnosis of brain tumor. In each of their nine cases reported at that time, craniotomy was performed for a presumed tumor. All their cases were situated in one or the other of the cerebral hemispheres and followed trauma, strenuous exercise (such as appeared to be a precipitating factor in at least one of our patients—Case I; infra), severe emotional strain, or endocarditis;

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one case occurred during streptococcus viridans endocarditis (i.e., an intracerebral hemorrhage surgically removed), the patient recovering sufficiently to return to her home where she eventually succumbed from her endocarditis. In the majority of their cases, the hemorrhage was accompanied by an attack of unconsciousness and by progressive hemiplegia, but the progression of symptoms became more or less stationary within a short period of time. However, when such progression seemed to arrive at a standstill, *signs of increased intracranial pressure developed.* In some instances, the hemiplegia was *slowly* progressive and the symptoms therefore resembled those that develop as a result of tumor. The occasional development of unilateral or generalized convulsions also should be stressed as part of the clinical picture of subcortical cerebral hemorrhage.

Concerning apoplexy, Kaplan[4] stated, in 1937, that the criteria for surgical intervention cannot be stated definitely, but operation is occasionally justified in *young* or *middle-aged individuals* who survive forty-eight hours or more after the initial cerebral vascular accident and *whose symptoms are progressing.* A preliminary ventriculogram for precise localization of the lesion is advisable. Those patients, on the other hand, who are afflicted with advanced hypertension and renal disease or who show massive hemorrhage as revealed in the spinal fluid are usually best cared for medically rather than by operative intervention. However, it should be stressed that what is apparently a massive spontaneous subarachnoid hemorrhage may be bleeding from a cerebral tumor. Klemme[8] reported such a case in a young man of nineteen, admitted several times to the hospital with symptoms and signs suggesting a classical type of spontaneous subarachnoid hemorrhage with very bloody spinal fluid, a spastic neck, and normal fundi. In one of these recurrent bleeding episodes, the patient died and at postmortem examination a rather circumscribed glioma in the right cerebral hemisphere was found, from which bleeding had occurred into the subarachnoid space. Such instances of massive subarachnoid hemorrhage from a tumor with concomitant great aggravation of symptoms are admittedly rare (probably less than 1.0 per cent in any series of verified brain tumors). Klemme's patient, however, had a well-developed left homonymous hemianopsia demonstrable between his attacks of bleeding, a finding rather unusual in spontaneous subarachnoid hemorrhage from a basilar vessel alone.

Kaplan[4], in his plea for considering certain cases of apoplexy as surgically important, quoted Cushing who stated in 1903 that the temporary amelioration of the severe symptoms in apoplexy is a sufficient justification for future attempts to afford surgical relief in certain carefully selected cases. Kaplan also mentioned Spiller's statement (1908), "the duration of life after the onset of cerebral apoplexy may be many hours (or days)"*. However, in this connection, it should be emphasized that many cases of supposed cerebral hemorrhage with apoplectic onset are, in reality, *extensive thromboses,* usually of branches of the middle cerebral artery with cerebral softening beyond the thromboses. Such lesions are rarely of surgical significance, but occasionally have been operated upon by neurological surgeons with recovery of the patient.

The following six cases (see two addenda, infra) of surgically treated subcortical hemorrhage of the brain are briefly presented; five were in white patients and one colored; there were four males and two females. Three were observed and treated at the Medical College of Virginia; the other three at the University of Virginia. Four were subcortical *cerebral* hemorrhages in one or the other hemisphere, one was a massive unilateral hemorrhage in the right *lateral ventricle,* and the sixth was an *intracerebellar* hemorrhage in the left hemisphere.

†*Case I.* Dan G., a thirty-nine-year-old white filling station operator, was admitted to the University of Virginia Hospital, August 14, 1940, complaining of convulsions and paralysis of the right arm. The symptoms began one year before admission when, while wrestling, numbness and weakness of the right arm developed. Three days before admission to the hospital, he had had his first of three convulsions involving chiefly the right arm.

Examination disclosed a right lower facial weakness with moderate weakness of the right arm, the right leg being unaffected. The tendon reflexes were exaggerated on the right side with a positive Hoffmann's sign on that side and several beats of ankle clonus as well. The blood pressure was 130/95, and the pulse was ninety per minute. There was no astereognosis and no aphasia, which was remarkable

*The parenthetic phrase was added by the present writer.

†Serologic and spinal fluid tests for syphilis in all of the eight cases were negative.

in view of the location of the lesion in this case, the patient being right handed. The optic disks were normal. An electroencephalogram suggested a cortical lesion in the left motor and pre-motor areas. The diagnosis was believed to be a left cerebral lesion, probably vascular, in the nature of an angioma or possibly a cerebral thrombosis. Attempts at ventriculography were unsatisfactory both through the posterior parietal and the frontal regions due to very small ventricles. A few c.c. of xanthochromic fluid were encountered beneath the dura, frontally, on the left side. Two days later, a left

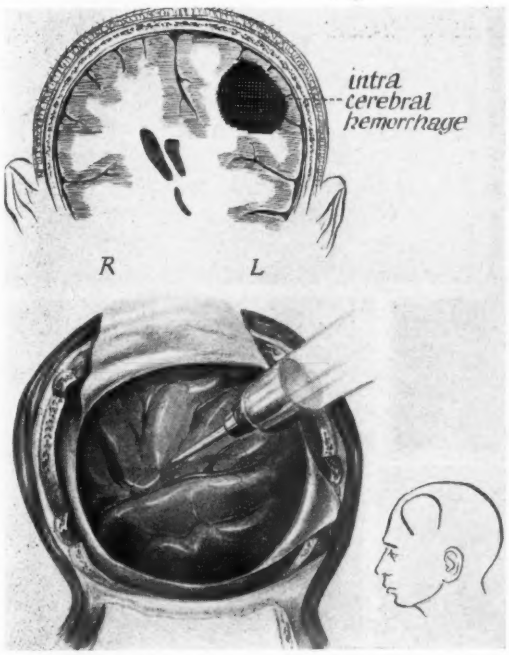

Fig. 1, Case I.—Artist's drawing showing the aspiration of the liquid clot beneath Broca's area (left lower drawing), the proximity of the clot to the cortical surface (upper drawing), and the location of the osteoplastic flap through which the hemorrhage was removed (right lower drawing).

frontal osteoplastic flap was turned down under local (1% novocaine) anesthesia and a few mm. subcortically, in the region of Broca's area, there was found a large intracerebral liquid clot (50 c.c.) which was evacuated by aspiration through a small cortical incision (Fig. 1). Five days later, the motor power of the right arm was normal, and he has since continued in good condition for seventeen and a half months with a very slight hesitancy in speech as his only disability, no convulsions having occurred postoperatively.†

Case II. Ulus D., an eighteen-year-old white millworker, was admitted to the University of Virginia Hospital (on the Neuro-Psychiatric Service, Dr. D. C. Wilson, Director), on October 14, 1940, complaining of severe frontal headaches of one month's duration with weakness in the left arm and leg for eighteen days before admission. There was a vague history of his having struck his head sharply in the mill without a definite concussion, several weeks before admission. This history of trauma was possibly not reliable for several reasons, and is certainly to be considered doubtful.

Five weeks before admission, the patient had had a generalized convulsion with unconsciousness. The weakness of the left side had occurred rather suddenly and was associated with subjective numbness and tingling on that side as well. For several days at the time of onset of the left-sided weakness, he was unable to move this side at all. The patient also vomited frequently, had diplopia and considerable vertigo.

On examination, the boy was obviously suffering severely from headache. There was a bilateral choked disk of four diopters with retinal hemorrhages and weakness of the left sixth cranial nerve function; there was no gross hemianopsia detectable. There was marked weakness of the left arm and leg as well as increased tendon reflexes and ankle clonus on that side. Astereognosis in the left hand was present. The blood pressure was 110/68, and the pulse was ninety-two per minute. Skull films showed widening of the suture lines. A chest film suggested puerile tuberculosis of the left lung. Because of an associated cerebellar-like ataxia of the left extremities, a pre-operative diagnosis was made of a right cerebral vascular lesion (due to the sudden onset) or a left cerebellar tumor. Ventriculography again demonstrated very small ventricles, thus immediately ruling out a cerebellar tumor, but not giving a clear enough delineation of the ventricles to demonstrate just where in the right cerebral hemisphere the lesion lay. Therefore, in order to preserve vision, gravely threatened by the high choking of the disks and the retinal hemorrhages, a right subtemporal decompression was performed. In aspirat-

†Since this paper was first written, the patient had a single right sided convulsion (February 11, 1942) and X-ray therapy was subsequently given (left cerebral hemisphere).

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ing deeply (at a depth of six to seven cm.) in the right temporal region, a large liquid intracerebral hemorrhage (60 c.c.) was encountered (Fig. 2) and entirely removed by aspiration alone. The patient made a rapid recovery, being discharged fifteen days after operation with marked improvement in the motor power of the left side and in good general condition, being entirely relieved of headache. He has been seen on several occasions since operation. The choked disks subsided to normal in a few weeks, and the decompression has remained quite flat with normal pulsations. When last heard from, twelve months after operation, he had moved to a distant state, was symptom-free, had gained fifteen pounds in weight, and was working daily on a farm. No postoperative X-ray therapy was given at any time.

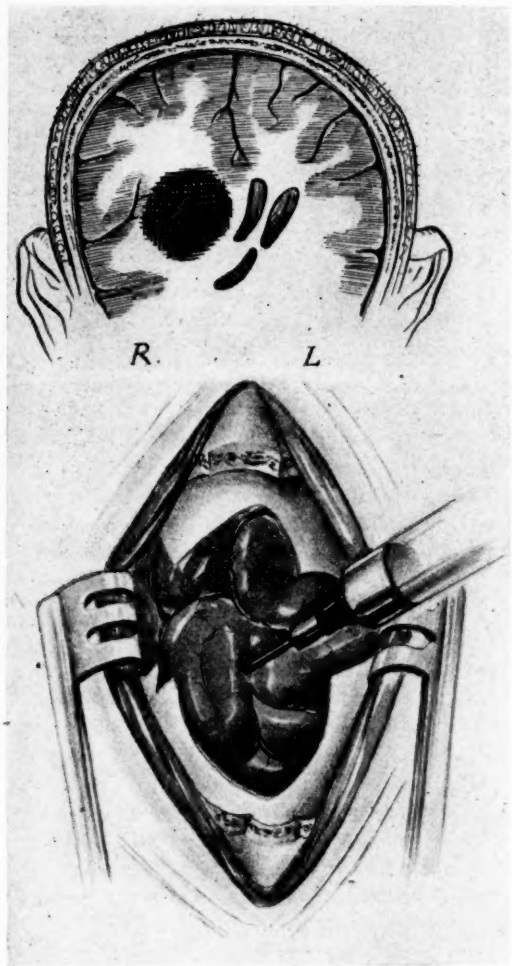

Fig. 2, Case II.—Artist's drawing showing aspiration of the large liquid clot located deeply in the right temporal lobe (lower drawing). The upper drawing shows the approximate depth of this hemorrhage beneath the cortex.

Case III. William N., a twenty-six-months'-old white boy was admitted to the Memorial Hospital, Medical College of Virginia, on November 23, 1939. His parents stated that he developed convulsions three weeks after receiving a severe blow on his head six and one-half months before admission. There was a transient weakness of the *left* arm after the convulsions which disappeared in a few hours. One week after this episode, however, he had a definite *right-sided* Jacksonian convulsion resulting in a residual right-sided weakness which persisted from the time of onset until operation five and one-half months later. After the convulsion causing the right-sided weakness, he lost the ability to speak even the few words which constituted his vocabulary before the convulsions. Many episodes of blank staring and facial twitching occurred. There was no history of any birth injury or infections in the first one and a half years or more of life.

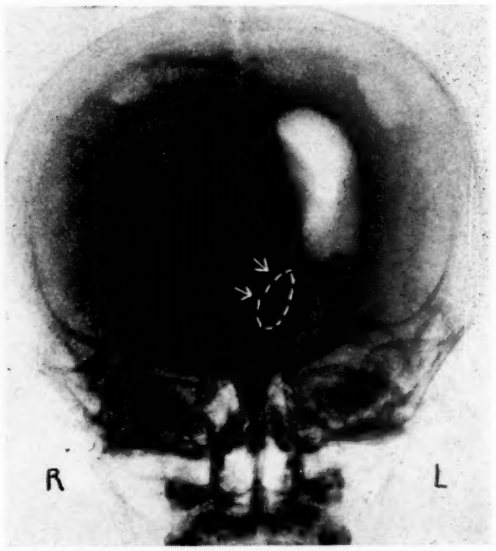

Fig. 3, Case III.—Antero-posterior ventriculogram showing a dilated left lateral ventricle and the third ventricle which latter structure is deviated toward the left side (dotted line and arrows) by a right cerebral mass lesion (intracerebral hematoma), precisely as a tumor would behave.

On examination the patient was very drowsy. The head was of normal size and contour, although the

vessels over the forehead were unusually prominent. Inspection of the optic disks showed blurring of the nasal margins. There was moderate weakness of the right arm without evidence of spasticity. The patient had been unable to move the right leg for ten weeks before admission.

Two days after admission a ventriculogram was done through bilateral frontal burr openings which demonstrated a normal dura and subarachnoid space on the right, but on the left a grayish-brown membrane of tenacious character four mm. thick was seen beneath the dura; apparently the child had developed a left subdural hematoma when he struck his head six and one-half months before admission. The air plates showed a moderately dilated left lateral ventricle with no air crossing to the right side. The left lateral and third ventricles were definitely shifted to the left by a presumed right cerebral (fronto-temporal) mass lesion (Fig. 3). Through an enlarged burr opening in the right fronto-temporal region, an old intracerebral hemorrhage (Fig. 4) was evacuated (by Dr. Coleman) of about 60 c.c. in volume. The condition of the child improved; he was able to move the right leg the night after operation for the first time in ten weeks. He left the hospital fifteen days after operation and has since done well. Twenty months after operation the child's father wrote us that the patient was much improved, especially in recent months.

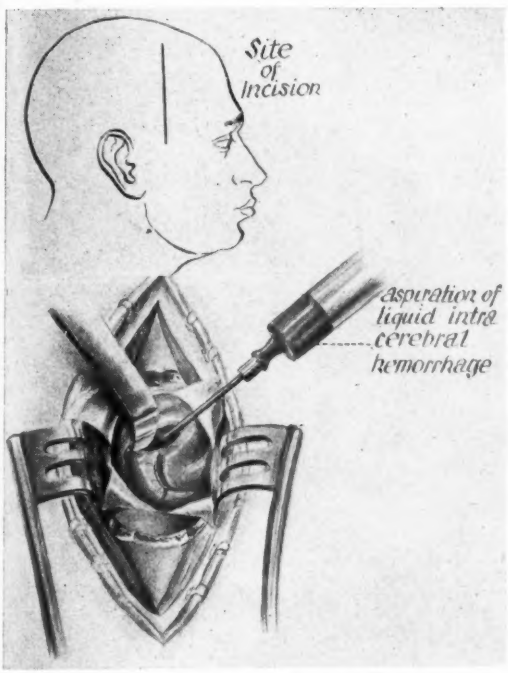

Fig. 4. Case III.—Artist's drawing showing the aspiration of the clot in the right fronto-temporal region through a small cortical incision (lower drawing). The upper drawing shows the skin incision and location of the operation.

Comment: The chief interest in this case is that the patient developed a *right-sided* convulsion (with residual weakness on that side) and aphasia following a head injury, the hemorrhage being in the *homolateral* side of the brain. This is seen not infrequently in cases of chronic subdural hematoma and is to be explained by pressure of the *opposite* crus cerebri against the sharp edge of the incisura, producing, thereby, convulsions and/or weakness of the extremities on the same side as the cerebral mass lesion.

Case IV. Agnes C., a thirty-seven-year-old colored woman, was admitted to the St. Philip Hospital, Medical College of Virginia, on October 23, 1941, complaining of severe right frontal headache of three weeks' duration. She had had high blood pressure for four years although the highest systolic reading recorded during her three weeks in the hospital, both before and after operation, was 170 mm. Hg. The headache began suddenly while at work and radiated to the right eyeball. The pain was so severe that she went to bed immediately. Since the onset of the headache, she had developed nausea and drowsiness. The pain in her head was not typical of that seen with a basilar aneurysm (circle of Willis). The fundi showed one diopter of choking of the right and only blurring of the left optic disk. There was a left homonymous hemianopsia. The day before operation, the patient developed a left lower facial weakness for the first time. The deep tendon reflexes were equal bilaterally and no pathological reflexes were elicited. X-ray films of the head, incidentally, showed a purulent right-sided sinusitis. Bilateral anterior burr openings and aspiration of each frontal lobe ruled out a frontal lobe abscess. A left-sided ventriculogram through a previously placed anterior burr opening showed air only on the left side without displacement of the left lateral ventricle. In attempting to enter the right posterior ventricular horn to obtain better air plates, old bloody fluid was encountered in the right parietal lobe at a depth of two cm. The ventriculogram was therefore dispensed with, and the clot evacuated

(by Dr. J. L. Thomson, Resident Neuro-Surgeon at the Medical College of Virginia) through a right parietal decompressive procedure together with a transection of the cerebral cortex (Fig. 5). Thirty c.c. of old clotted and liquid blood were removed, the ventricle not being entered at any time. The walls of the cavity were white and glistening after all the clot had been removed; the brain thereafter collapsed, obliterating the cavity, and the cortex receded from the dura although it protruded markedly through the dura before the clot was evacuated. The dura was tightly resutured without drainage. The patient made an uninterrupted convalescence and when last seen in a follow-up visit two and one-half

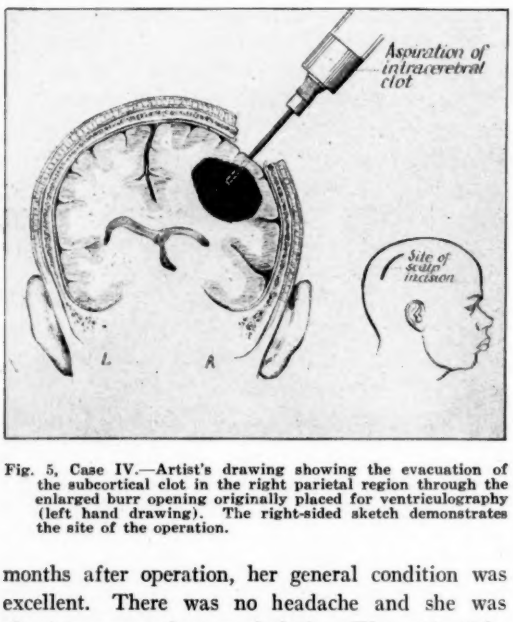

Fig. 5, Case IV.—Artist's drawing showing the evacuation of the subcortical clot in the right parietal region through the enlarged burr opening originally placed for ventriculography (left hand drawing). The right-sided sketch demonstrates the site of the operation.

months after operation, her general condition was excellent. There was no headache and she was about to resume her usual duties. The optic disks were well outlined at that time.

Case V. This case, previously reported in greater detail two years ago[9], was included at that time in a group of five unusual types of head injury. It is that of a massive unilateral ventricular hemorrhage following the removal of which the patient made a complete recovery.

Christine M., a nine-year-old white girl, was admitted to the University of Virginia Hospital on November 20, 1938, at which time she had severe headache and vomiting and was, at intervals, in a semiconscious state of two days' duration. Three days before admission, she was struck in the face by a swing while playing at school, at which time she was only slightly dazed. A lumbar puncture before admission (the day after the injury) showed a hazy fluid with nine white cells and a few red blood cells per cubic mm.; a few hours later definite weakness of the left side and drowsiness had developed.

On admission, the patient was very drowsy, the optic disks were hazy, and there was complete paralysis of the left side with associated increased tendon reflexes on that side, but no pathological ones. There were several port-wine nevi in the skin of the left shoulder. Skull X-ray films were normal. It was thought that the patient had a probable right cerebral hemorrhage, although tumor (rather rare in the cerebral hemisphere in patients of this age)

Fig. 6, Case V.—Artist's sketch demonstrating the pathology in this case. Spontaneous coagulation must have occurred at the right foramen of Monro as a previous ventriculogram had shown air only in the left lateral ventricle and the third ventricle. Furthermore, the fluid previously removed by lumbar puncture and during ventriculography (via the left lateral ventricle before evacuation of the right ventricular clot) was practically free of blood (see text).
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was also considered a possibility.

Through posterior parietal burr openings a ventriculogram was attempted, first on the left side, 15 c.c. of very slightly blood-tinged fluid being obtained. X-ray films showed air only in the left lateral ventricle and the third ventricle, both of which were displaced toward the left side. A ventricular needle was then readily inserted in the right lateral ventricle with the primary purpose of injecting air in this ventricle also, and 25 c.c. of extremely bloody fluid were immediately obtained from that ventricle (right), which did not clot on standing. Apparently the patient had had a massive right lateral ventricular hemorrhage with spontaneous coagulation at the right foramen of Monro (Fig. 6) as fluid *previously* obtained from the left lateral

ventricle and the spinal fluid (by lumbar puncture before admission) showed practically no blood. The right lateral ventricle was tapped again four hours later and 20 c.c. of very bloody fluid were obtained containing 1.9 million red blood cells per cubic mm. Strong sedation, including several doses of paraldehyde, was necessary for a few days, because of extreme restlessness, after which the patient made an uneventful recovery. She was discharged fifteen days after operation with only very slight weakness of the left arm remaining as a residual finding. A follow-up report eleven months after operation stated that the patient was in excellent condition.

Comment: The possibility that this patient had an angioma in or contiguous to the right lateral ventricle must be considered, especially in view of the port-wine nevi observed on the child's left shoulder. A similar case has been reported by Craig and Lipscomb[10] who described, in 1938, a unilateral right ventricular hemorrhage in a twenty-four-year-old man that simulated a brain tumor; this was likewise successfully removed through a right cerebral osteoplastic flap with excision also of an angioma in the ventricular wall. These writers correctly state that most intraventricular hemorrhages reported in the literature were found at necropsy after a sudden sharp pain in the head, prostration, and death. In their patient, a slight head injury without unconsciousness had occurred three months before severe symptoms developed, leading to operation. The importance of trauma in their case is, therefore, doubtful.

Case VI. The last case (see two addenda, infra) is that of a left *intra-cerebellar* hematoma which was evacuated about sixteen and one-half years ago. The patient is alive and well today without residual symptoms. Only one similar case has been reported (to the writer's knowledge) in the literature to date (to be referred to after *Case VI* has been briefly presented).

Edward M., a twenty-six-year-old white bus driver, was admitted to the Memorial Hospital, Medical College of Virginia, on October 21, 1925, complaining chiefly of headache, vertigo, and vomiting. Five weeks before admission he first developed, spontaneously, pain in back of the left ear. There had been no head injury or discharge from the ears at any time. Several abscessed teeth had been found a few weeks before admission. Vertigo was very marked before admission to the hospital. Unsteadiness also developed and headache as well, which was very severe when he moved about to any extent. He was bed-fast for two weeks before admission. Nausea and vomiting were marked when lying on his back.

The pulse rate was never less frequent than seventy per minute during his hospital stay both before and after operation, respiration was normal, and there was no fever except for 99.2° the day after operation. There was tenderness on palpation over the left cerebellar fossa. The optic disks were well-outlined although the retinal vessels were engorged. Diplopia was present and there was slight nystagmus in both lateral directions on some days, and on others no nystagmus was seen. The patient almost invariably vomited when turned on his back, so that a complete neurologic examination was difficult, if not impossible. He preferred to lie on the *right* side. The neck was slightly spastic and hearing was slightly impaired on the left side only. There was no tinnitus. A nose and throat consultation definitely ruled out labyrinthitis and acoustic tumor. *No ataxia of the extremities or adiadokokinesia was present.* X-ray films of the mastoids revealed no abnormality on either side.

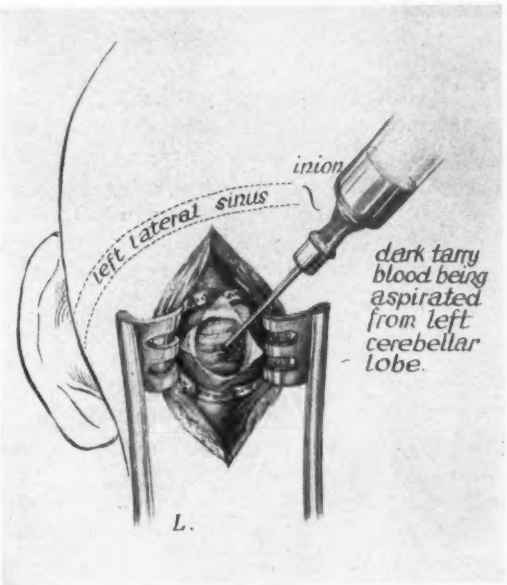

Fig. 7. Case VI.—Artist's drawing showing the left intracerebellar clot being aspirated through a ventricular needle. Removal of this liquid clot under novocaine anesthesia caused immediate and permanent relief of the severe headache and other disabling symptoms.

At operation (by Dr. Coleman) a burr opening was made over the left cerebellar hemisphere, 1% novocaine anesthesia being used. At a depth of two cm. beneath the cortex, 15 c.c. of thick, tarry-black blood were aspirated, the cortex being under considerable pressure when the dura was first opened (Fig. 7). The cavity was drained with two drains which were removed twenty-four hours later. Immediately on aspirating the hematoma, the patient exclaimed, "You hit the spot, Doctor, I feel much better now". He made an uneventful recovery, and left the hospital nine days after operation, relieved of all his symptoms, and has remained so to date (sixteen and one-half years after operation), according to his family physician.

Comment: Such a case is extremely rare and is of interest (apart from the absence of homolateral ataxia or adiadokokinesia) chiefly as a medical curiosity, there being only one other case, successfully treated surgically, on record in the medical literature to the writer's knowledge. This other case was described recently (September, 1941) by Dr. Cobb Pilcher, being included in his report of eight cases of subcortical (surgical) hematoma[11]. His case was that of a twenty-seven-year-old man who developed left-sided ataxia, vomiting, and vertigo four months after a playful scuffle in which he did not injure his head. At operation, through a bilateral suboccipital craniectomy, a left cerebellar clot was removed 3 cm. beneath the surface, a transcortical incision being made. The hematoma also had compressed the left side of the brain stem. Microscopic examination of the wall of this blood cyst revealed no evidence of neoplasm. Twelve months later, the patient was entirely well without evidence of any recurrence of the hemorrhage.

ADDENDUM I

Since the above six cases were observed and this paper first written, a seventh one has been operated on at the Medical College of Virginia Hospital. A twenty-eight-year-old white man was admitted to the Medical Service of Dr. W. B. Porter (February 19, 1942) with severe diabetes mellitus requiring 190 units of insulin per day. In addition, he had had left-sided convulsions for seven years beginning in the left leg. Twelve days before operation, another convulsion had occurred resulting in complete left-sided hemiplegia. The optic disks were normal. The spinal fluid and ventricular fluid both were xanthochromic. In the plain X-ray films, the pineal gland was definitely shifted to the left side. Ventriculography showed a right parietal mass lesion near the midline superiorly. A parasagittal meningioma was strongly suspected. Immediate operation (Dr. J. L. Thomson, March 3, 1942) disclosed a deep right parietal subcortical liquid clot (40 c.c.) communicating with the right lateral ventricle, evacuated through a transcortical incision and aspiration. No tumor elements were found in this clot on frozen section examination. The dura was tightly resutured. His immediate post-operative condition was quite satisfactory.

ADDENDUM II

An eighth case of subcortical hemorrhage has been operated on since this paper was first submitted for publication:

Willis G., a 27-year-old colored laundry worker, was admitted to St. Philip Hospital, Medical College of Virginia, on June 11, 1942, complaining of severe headache which had developed spontaneously several weeks before admission. On examination, there were no signs of increased intracranial pressure but slight weakness of the left side was present. On June 22, 1942, a ventriculogram (via the left anterior horn) showed a ventricular shift to the left side caused by a right cerebral mass lesion. As air was seen only in the left lateral and the third ventricles, the right frontal region was tapped in the hope of filling the right lateral ventricle with air but, in the course of this procedure, a subcortical liquid clot (30 cc) was evacuated from the right posterior frontal region (not connected with the ventricle), and the patient made an uneventful recovery, being discharged fifteen days after operation in excellent condition. He has since resumed his work in the laundry.

SUMMARY AND CONCLUSIONS

1. Eight cases of subcortical hemorrhage of the brain of surgical significance have been presented. All were operated upon with recovery. Six were in one or the other of the *cerebral hemispheres*, one was in the right *lateral ventricle* with sparing of the other ventricles, and one was in the left *cerebellar hemisphere*. Thirty-three subcortical clots of the brain treated surgically have been reported heretofore in the literature.

2. There is no pathognomonic syndrome of aid in diagnosing such a clot pre-operatively, many of them

being considered as tumor suspects before operation, although occasionally the correct diagnosis has been made *pre-operatively.*

3. The development of *sudden* symptoms of increased intracranial pressure—suggesting, as a rule, intracranial hemorrhage of one type or another, even if associated with bloody spinal fluid so typical of massive subarachnoid hemorrhage (either primarily in the subarachnoid space or in the ventricles)—should not invariably commit the patient to a diagnosis of massive apoplexy or ruptured basilar aneurysm. This is especially true if the onset of symptoms is associated with a *homonymous hemianopsia,* which finding appears to make a diagnosis of a surgical subcortical clot not only possible but, in the occasional case, probable, particularly if the symptoms and morbidity of the patient do not develop too precipitously. A study of the cases of subcortal cerebral clots occurring in the literature to date certainly supports such an opinion.

4. A review of the eight cases reported herewith, and of those referred to in the introduction of this paper, leads to the conclusion that no patient, however moribund from an apparent mass lesion of the brain, be it, presumably, tumor or intracranial bleeding, should, in most cases, be refused at least a limited exploration through a burr opening over the appropriate area, preferably after ventriculography, and aspiration with a ventricular needle. Occasionally a surprisingly happy solution will be encountered which is undoubtedly life-saving for the patient and of inestimable satisfaction to all physicians in charge of the case.

N. B. The writer wishes gratefully to acknowledge the kind permission of Dr. Coleman to include Cases III and VI in this paper.

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1200 East Broad Street.

SOME RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF CUTANEOUS FUNGUS INFECTIONS*

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and
RICHARD W. FOWLKES, M.D.,
Richmond, Virginia.

In man there are many diseases which are the result of fungus infections. Due to the fact that keratin is utilized by many of these fungi, the skin is very frequently invaded. In this paper we shall discuss some of the cutaneous fungus diseases.

Tinea or ringworm of the scalp is frequently seen among the poor. It is a disease of childhood, boys being more often affected. At the dermatological clinic of the Medical College of Virginia the disease is more prevalent in negroes. The parents usually accompany the child with a complaint of "bald patches", "tetter", or "ringworm". A good many of the cases are sent to the clinic by the school nurse. On close inspection the "bald patch" is found to be covered with broken hairs. The number and size

From the Department of Dermatology of the Medical College of Virginia.

*Read before the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 6-8, 1941.

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of the area varies considerably. They may or may not present signs of inflammation. The diagnosis of ringworm may be established with the microscope. A number of the broken hairs (stubs) are placed on

Fig. 1.—Ringworm of the scalp (animal type).

a slide and soaked in a 20 or 30 per cent solution of potassium hydroxide. Spores are easily identified If the spores are large and oblong one may suspect a Trichophyton. This type of infection is rarely seen. Small round spores are the ones generally observed and they are known as Microsporons. Their arrangement may be described as mosaic. There are two species of Microsporons; Microsporon audouini (human) and Microsporon lanosum (animal). It is impossible to differentiate them in a potassium hydroxide preparation. This may be accomplished only by appropriate cultural studies. The following observations may also help in differentiating the particular organism:

M. audouini (human type)	M. lanosum (animal type)
1. "Patches of baldness" smaller	1. Large "bald patches"
2. Inflammation rare	2. Inflammatory reaction encountered frequently.
3. Lesions limited to the scalp	3. Lesions may be found on other parts of the body
4. No history of infected kitten or puppy	4. History of infected kitten or puppy.
5. No reaction when tricho phytin is injected intracutaneously.	5. Usually react to intracutaneous injection of trichophytin.

In recent years Wood's light (filtered ultraviolet rays) has been used as an aid in making the diagnosis Microsporon infections. The infected hairs fluoresce when the patient is placed under a source of these rays in a completely darkened room. The infected hairs emit a bluish green light while the uninfected hairs are black. In this manner the extent of the infection may also be determined; a good many hairs which appear normal to the naked eye will fluoresce.

Infections of the scalp due to Trichophyton require very little treatment. This is true because the inflammatory reaction which results from this infection helps to destroy the organism. There is a local and general immunity produced which can be demonstrated with intracutaneous injection of trichophytin. Mild antiseptic ointments suffice in the treatment of these infections.

As pointed out in the table, Microsporon audouini infections produce very little inflammation and consequently a minimum of immunity results. Here it is necessary to epilate with roentgen rays.

Microsporon lanosum incites inflammation and

Fig. 2.—Tinea pedis (athlete's foot).

with it a certain amount of resistance to the infection develops. Here gentle antiseptic local treatment is sufficient. One may apply a mild antiparasitic ointment locally; and the scalp should be washed once weekly with ordinary soap and water.

"Athlete's foot" is the lay term for a fungus infection which involves the feet, particularly the toes. It has been estimated that 50 to 90 per cent of the adult population has been infected. This infection is seen more often in men during the summer months. Children rarely have tinea pedis.

There are a number of organisms which may be recovered from the lesions which involve the feet. Two that are frequently encountered are Trichophyton gypseum and Trichophyton purpureum. When the offender is T. gypseum the interdigital web between the fourth and fifth toes is involved. Vesicles which soon rupture appear. This leaves a macerated soggy epithelium. Redness and itching are

generally present. The sole may also be involved. In some individuals vesicles may be found on the hands. The palms and lateral aspects of the fingers are the favorite sites. This is the result of fungi or their products entering the blood stream at the original site of the infection. These distant lesions upon the hands are known as dermatophytids. Scales examined from these lesions are devoid of fungi;

Fig. 3.—Tinea purpureum of the palm.

whereas they are usually found in material taken from the feet (the original site of infection). This is a manifestation of allergy and the trichophytin test is positive.

These dermatophytids are very often a diagnostic problem. One has to decide whether this eruption is of mycotic or non-mycotic origin. A positive trichophytin test is of little aid, because it may be the result of a fungus infection contracted years previously—analogous to a positive tuberculin test. It may be stated, and even this is not accepted by all,

Fig. 4.—Tinea purpureum of the nails.

that an inflammatory vesicular dermatitis of the hands or feet with a negative trichophytin test is non-mycotic.

The Trichophyton purpureum infection results in a non-inflammatory dermatitis and usually involves the hands and feet. The nails may also be involved in a characteristic manner. The nail is undermined; the infection is deep in the nail bed and scrapings must be made from this area when one is searching for the causative organism. This infection, just as some of those previously mentioned, produces little local or general immunity and for that reason is often extremely resistant to local therapy.

During the acute stage of tinea pedis due to Trichophyton gypseum the lesions are erythematous and vesicular. At this time only soothing applications should be used, such as boric acid compresses and boric acid (5 per cent) ointment. During the desquamative stage a modified Whitfield's ointment is used. The Trichophyton purpureum infections of the soles and palms are treated with strong keratocytic ointments. The infected nails are the most difficult to treat. As a last resort surgical avulsion may be resorted to, but the new nail may regrow with the infection.

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DISCUSSION

DR. JAMES W. ANDERSON, Norfolk: At a recent meeting in Durham, Dr. Fowlkes requested that, instead of using the usual conventional discussion of his paper, I take up in the limited time I have a discussion on therapy. So, in order to keep within bounds, I have written out the following brief outline of the therapy.

In the type of tinea capitis seen in Virginia, it is rarely necessary to depilate the scalp by either x-ray or thallium acetate, although it is a decided advantage to remove the hairs in the infected area by mechanical means, such as tweezers, epilating waxes or the crude but effective method of applying a piece of adhesive and remove it with a sudden jerk.

Clipping the scalp, daily, shampooing and the rubbing in of an antiseptic ointment over the entire scalp with energy and persistence, usually suffices to clear the infection. As has been explained by Dr. Fowlkes, the use of the Wood's filter is of a great deal of value in determining the progress of the treatment.

Local applications may be the mercurials, sulphur, dilute iodine, etc. My own preference is for an iodine-cinnamon ointment in increasing strength as the scalp becomes accustomed to it.

The use of the new wetting agents in ointment bases will probably change the picture as soon as they are worked out.

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In the kerion type ringworm, with its carbuncular lesions, you are dealing with self-limited disease, which is best controlled by wet packs during the acute stage, to be followed by the ointments listed above. Copper salts and the mercurials are best used in the wet dressings, especially the copper-zinc solution known as Alibour water.

In tinea of the hairless skin the problem is usually simple. An exfoliative, antiseptic treatment is usually effective. The old sodium thiosulphate-acetic acid routine is especially valuable, especially in tinea versicolar and the usual small scaly type or lesion.

Dilute tincture or iodine, ammoniated mercury and sulphur ointments are also very effective. I wish, however, to warn you at this point never to mix iodine and mercurial, as the result is usually a violent dermatitis.

It is with the tinea infections of the feet and intertrigo spaces, such as the crotch, buttocks, axillae and breasts that we are particularly interested, as they are becoming increasingly common and present considerable therapeutic difficulties. These two type of ringworm are usually associated, the patient transferring the infection from the feet, either in the bath or with his towel, so a tinea cruris should always call for an examination of the feet.

These type are primarily hot weather diseases, their incidence increasing as the weather becomes hotter, decreasing proportionately as it becomes colder. Since the presence of heat and moisture are essential to the growth of the organism.

Based on this fact, treatment is directed along three lines: first, to keep the parts as dry as possible; second, exfoliation; and, third, antisepsis.

Unfortunately, the antiseptic factor has been placed first in the innumerable "athlete's foot" remedies, often with disastrous results.

Dryness can best be obtained in the day time by the wearing of a ventilated shoe or sandal, thin socks, and the very liberal use of common talcum powder either alone or with the addition of a small percentage of salicylic acid. Exfoliation is produced by the use in ointment or lotion form of some 6 per cent salicylic acid and the antiseptic action can be enhanced by addition to the ointment of benzoic acid, thymol, etc., as used in the ever-popular Whitfield's ointment. Care should be taken not to irritate the areas, and they should be rested at the first sign of irritation.

A good routine, where there is not too much eczemitization, is to have the patient thoroughly wash the feet with soap and water before retiring, removing all dead skin and macerated tissue, and opening all vesicles.

The prescribed ointment should then be thoroughly rubbed in and left on overnight. In the morning the feet should again be washed or the ointment wipped off, after which the feet should be liberally sprinkled with talcum and the ventilated shoes worn during the day.

Personally, I feel that the latter part of the treatment is the most important, as the best of treatment will fail if the patient continues to wear a solid shoe which keeps the feet hot and moist. I have found plain talcum to be as effective as the medicated powders offered us daily.

In the tinea cruris, treatment is directed very much along the same lines. When encountered in very hot weather, these forms are usually rather highly eczematized and should be somewhat cooled off before attempting to eradicate them.

Among the most useful drugs that I have found for this purpose is the Quinolor ointment of Squibb's, as originated by Dr. Peck for the treatment of sycosis vulgaris. It is a bit strong and is best diluted to 50 per cent with vaselin.

This to be applied at night after thorough washing, removed in the morning, and the parts covered with powder or calamine lotion. At the end of a week or ten days the use of half strength. Whitfield's or one of the various salicylic acid lotions usually completes the cure.

I have tried only to outline a simple and effective method of treating tinea, which will apply to the majority of cases. Time does not permit the mention of special treatment in stubborn cases, but, suffice it to say, when you have developed a fairly successful technique, do not be thrown off balance by the next detail man who has the last word in fungicides, for, unfortunately, the drug that will destroy the organisms in the presence of heat and moisture does not exist.

DR. FOWLKES, closing the discussion: I should like to make just one remark. Trichophyton vaccine has been used, or recommended. A group of investigators came out several years ago recommending the use of Trichophyton to help cure these cases. They admit that they were a little over-enthusiastic. Other investigators came along and found it was of very little value

THE EYES AS PORTAL OF ENTRY FOR CERTAIN AIR-BORNE INFECTIONS*

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Roanoke, Virginia.

It is stated by Buchbinder that "respiratory infections are probably responsible for the greater part of all illness in every age group."[1]

These infections are spread chiefly in two ways. The first I shall mention, because it is by far the more common method, is by bacteria floating in the air. Droplets expelled from the nose and throat in coughing and sneezing—or even in talking—do not all fall to the ground. The theory that they do so ignores the important fact that the droplets may

*Read at the annual meeting of the Medical Society of Virginia, at Roanoke, October 5-7, 1942.

evaporate. Those less than 1/10 mm. in diameter may float in the air for as long as several days as they have practically the same density as the air.[2]

MacDonald,[3] in his study of the bacterial content of the air of operating rooms in a hospital, found a positive correlation between the number of persons in a given area and the bacterial count for the air.

In a study recently conducted at a large department store in New York, it was found that Streptococci were not most plentiful in the air during the rush season of November and December, but during the acute coryza season of February and March.[4]

The other manner of air-borne transmission of disease is by means of the larger droplets. Flugge[5] showed that droplets emitted in sneezing and coughing could be recovered at only relatively short distances from their point of origin, and that they described an arc downward as they descended, due to the force of gravity.

While this form of transmission is naturally less important than the type carried by air, I wish to call attention to one feature of droplet spread of infection which I feel is grossly over-looked, both by the laity and the medical profession. I refer to droplets entering the eyes. If we consider the anatomy of the face we must realize that droplets which enter the respiratory tract do so through either the mouth, the nose, or the eyes. The mouth is normally closed—the nostrils have their opening on almost a horizontal plane; so droplets would have to describe an upward arc to enter the nose. On the other hand, the eyes are on a vertical plane. They comprise a fairly large proportion of the area of the face, and there is ready passage through the lacrimal duct into the post-nasal space.

In a series of 15 rabbits which I tested, in which a drop of methylene blue was placed in the eye, the dye appeared at the nostrils in an average time of 4 minutes. This is graphically demonstrated every time we put argyrol in a patient's eye, and see him promptly expectorate the drug.

It may be argued that methylene blue and argyrol are hardly comparable to droplets of saliva in the eye, since they are somewhat irritating, are inserted in larger amounts than are droplets coughed into the eyes, and therefore stimulate lacrimation. In rebuttal, all this may be admitted; but, although the time of passage may be slower in the case of droplets, still it is undeniably the case that the lacrimal secretions normally pass from the eyes to the nose, and would naturally carry with them such infectious matter as they contained. Infections could thus be carried both to the respiratory tract and to the alimentary tract. A practitioner who wears spectacles and inspects them after a day's work will see to what extent they have protected him.

It would be interesting from an epidemiological standpoint to note whether doctors, persons riding trains and buses and soldiers in barracks who wear spectacles have a lower morbidity record of infectious diseases than those who do not wear them.

May I, in closing, sound a word of warning to those who do not wear glasses to be extraordinarily careful to protect themselves by avoiding infections by way of the eyes.

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DISCUSSION

DR. FRED E. HAMLIN, Roanoke: Dr. Graves has brought a message which should be of much interest to us all—the eye as an avenue of systemic infection. As you know, the mechanism of the eye is so arranged that it will take care of many foreign bodies and bacteria in most cases through its power of lacrimation.

Now, I am not an eye man; I do nose and throat work, and all I know about the anatomy of the eye I get from the journals. The lacrimal duct opens in the inferior meatus of the nose, 25 mm. from the vestibule; and the secretion from this duct drains down on the floor and drops upon the nasopharynx. This could be a possible source of infection, as the pharynx is said to be the most vulnerable spot to infection anywhere in the body. Jennison, of the Department of Biology and Public Health, Massachusetts Institute of Technology, has revealed by high-speed photography the secretions coming from the mouth during a sneezing attack. He claims there are about 40,000 particles shown in the picture. In sneezing, coughing, and talking, particles of secretion containing micro-organisms are expelled into the air. These droplets, in diseases of the respiratory tract, are a potential

source of infection. The larger droplets fall upon objects or on the ground and evaporate, and subsequently the residue will be carried away by the air. The smaller droplets evaporate in the air, leaving their content of microbes suspended in air. The velocity of the air past the glottis in coughing is often as high as 328 feet per second.

Illustration of droplets emitted by sneezing. (Courtesy of Dr. M. W. Jennison.)

The secretions from the nose and throat are more viscid than water. Naturally they can be atomized less finely.

Jennison studied the various types of face masks and found that as the permeability to air decreased the permeability to droplets decreased.

In sneezing, droplets came through the fabric masks in large quantities but were made small by the force of the air current rushing them through the fibers of the mask. In coughing and talking the masks appeared to allow the passage of a few droplets. Comparisons of the permeability of new and used masks of the same type showed that laundering may increase or may decrease the permeability, depending upon the texture of the masks and upon the number of washings.

The distance to which the majority of respiratory droplets are expelled is from two to three feet. It has been demonstrated that the farther the mask is from the mouth the fewer droplets will be forced through. Apparently the droplets became dispersed over a wide area as the pressure from the megaphoned mouth is lessened.

Dr. Young, an ophthalmologist here, told me that in Vienna some years ago there were two cases of tuberculosis among physicians, following coughing by patients in their faces. Dr. Jackson, in teaching us at the University of Pennsylvania, in his bronchoscopic classes always advised the men to have on glasses, whether they have refractive errors or not. He said one should wear large plain glasses, even though one does not need them all the time, as a protection to the eyes.

DR. GRAVES, closing the discussion: I wish to thank Dr. Hamlin for discussing the paper.

We all realize that when dealing with the bronchoscope, for instance, a person will certainly cough into the physician's face; and it is taken for granted that you will cover the nose and eyes to protect yourself. The main purpose of my paper was to emphasize the casual infection that may take place and to suggest a study to determine whether those individuals who do not wear glasses are more prone to infection of the upper respiratory tract than those who do wear glasses.

TREATMENT OF BURNS*

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Burns constitute a high percentage of the injuries sustained in the present war, both in service and civilian populations. Since any burn which involves one-fourth of the cutaneous surface offers a serious threat to life, the treatment of burns presents one of the most important problems in war surgery.

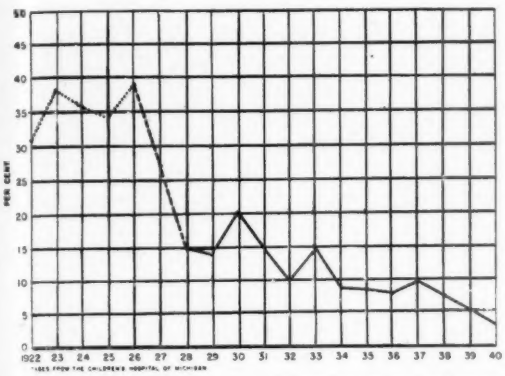
The fundamental principles involved in treating burns are fairly well agreed upon, but there is difference of opinion as to the best methods of carrying out these principles. A burn should be regarded as a surgical wound and the treatment should be fundamentally similar to that of other surgical wounds. If this attitude is adopted it will help to clarify some of the apparent conflict noted in the voluminous literature on this subject.

The most important contribution to the study of burns, and the one which has brought about the greatest reduction in mortality is the coagulation method of treatment. Since the introduction of tannic acid by Davidson in 1925, the mortality rate has shown a striking decline[1] (Fig. 1).

The treatment of burns was recently reviewed by the National Research Council, with outstanding authorities, from several fields of medicine participating. The consensus of their opinions is presented in the

*Read before the Norfolk County Medical Society in connection with the standardization of the treatment of civilian casualties in time of war.

journal, *"War Medicine,"* March, 1942. In this authoritative article the tannic acid-silver nitrate method is given first choice in the treatment of all burns except those of the hands and face.[2]



Graph. 1. Mortality curve. . . . before use of tannic acid treatment; - - - experimental period; — — tannic acid and gentian violet combined with silver nitrate (10 per cent). Total cases 1,018. (Penberthy, G. C., and Weller, C. N., *Surg., Gyn. and Ob.*, 74:428-432, 1942.)

There are some disadvantages to the use of tannic acid. The aqueous solution is unstable; infection is prone to develop beneath the crust; scarring is almost certainly increased by its use; it is contraindicated in burns of the face, and when used on the fingers it may produce gangrene. On the other hand, it has certain very definite advantages. A more rapid coagulation is obtained than by other methods and this is most important in controlling shock, in preventing loss of tissue fluids, and in alleviating pain; it is simple to use, economical, and effective. It has probably had more extensive clinical application than any other form of treatment and there is no argument as to the part it has played in lowering mortality.

There are other substances which will produce coagulation of the burned surface and which are free from certain disadvantages of tannic acid. The best known of these is gentian violet. The advantage of gentian violet is that it is stable in solution and may be kept prepared as a spray ready for instant use. The crust is softer and more pliable and it may be used on the hands and face. The crust may be more easily removed and because of its antiseptic properties there is less tendency to formation of infection beneath the crust. There is less scarring than with tannic acid and less tendency to destruction of small islands of epithelial cells. Gentian violet, like tannic acid, may be used with 10 per cent silver nitrate to produce more rapid coagulation.

The recently developed triple dye method of treatment provides a satisfactory coagulation and is effective in reducing infection to a minimum. The coagulation is not as rapid as that produced by tannic acid. This preparation is a solution made up of gentian violet, brilliant green and acriflavine.[3]

Recently the sulfonamides have been used quite extensively in the treatment of burns. Good results have been reported in a limited number of cases using 3 per cent sulfadiazine in triethanolamine.[4] A thin translucent eschar is obtained, but the eschar requires several days to develop and this is a definite disadvantage. On the other hand, infection is kept to a minimum, there is little destruction of tissue, and the eschar is comparatively easy to remove.

We have experimented with a number of sulfonamide preparations in the treatment of minor burns. One of the most satisfactory of these is 5 per cent sulfathiazole in a base of aquaphor. Superficial burns, and those covering only a small area, and burns of the hands and face have healed rapidly with a minimum of infection when this preparation is used. A feature which has been noted is the relief of pain which it affords. This relief in our experience is greater than that obtained by use of any of the usual anesthetic ointments. It is not recommended in the treatment of major burns which are seen within the first twenty-four hours.

Perhaps a word should be said about cod liver oil. It has been used quite extensively in various forms, and is highly advocated by some. In minor burns of the face and hands it apparently has given good results. It has also been advocated for use on granulating areas in the later stages of treatment. The claim that cod liver oil has some special curative property has not been definitely proven or disproven. In our opinion it is not suitable for treating extensive burns which endanger life.

The following outline is based on some of the most widely accepted and recent ideas in the treatment of burns.

(1) PREVENTION AND TREATMENT OF SHOCK

This is the first consideration in all cases. Morphine should be given in sufficient quantity to relieve pain; begin with at least one-half grain in all burns of more than slight degree.

Keep the patient warm. A word of warning is indicated here. Do not apply external heat too rapidly as it may precipitate circulatory collapse. In the

XUM

presence of a decreased blood volume, the sudden opening of the peripheral vessels may be fatal.

Five hundred cubic centimeters of plasma should be administered as soon as possible. Intravenous injections of normal saline or dextrose solutions should be given sparingly, especially saline solution. Two thousand cubic centimeters of plasma may be given in the first twenty-four hours in severe burns. It has been shown that concentrated plasma is not as effective as half dilution plasma in the treatment of shock. If possible, the hematocrit should be used as a guide in the administration of plasma and fluids. One hundred cubic centimeters of plasma should be given for each point above fifty in the hematocrit reading. Whole blood is rarely indicated except where hemorrhage has occurred, and it may be actually harmful.

Adrenal cortex hormone in our opinion is secondary in importance only to plasma in the treatment of shock, and should not be omitted. The synthetic analogue desoxycorticosterone acetate may be used. If either of these drugs are administered the amount of plasma necessary to restore normal circulation is greatly decreased.

(2) LOCAL TREATMENT OF THE BURNED AREA

(a) First Aid.—In first aid stations a water soluble jelly containing 10 per cent tannic acid and 5 per cent sulfathiazole may be kept on hand. This preparation is comparatively stable. As soon as the patient is brought in the whole burned area except the hands and face is coated with this jelly. No attempt at cleansing need be made unless gross contamination is present. After applying the jelly the area is covered with sterile gauze. Usually a satisfactory tan is obtained and further local treatment may be unnecessary until the tan is removed. As an alternative to the tannic acid jelly a spray of 5 per cent gentian violet may be used.

On the hands and face a liberal coating of 5 per cent sulfathiazole in aquaphor should be applied.

(b) Hospital Care.—The burned area is practically sterile at the onset but is frequently contaminated before the patient reaches the hospital. Surgical cleansing before coagulation will prevent much of the later infection, with its accompanying pain, sepsis and scarring. The burned area is cleansed under light pentothal anesthesia, using soap and water and flushing with sterile saline. A detergent will be necessary if grease is present. All blisters should be opened aseptically and loose epidermis removed. Cleansing, of course, must be delayed until shock is controlled.

After the burned area is prepared, spray with a fresh 10 per cent solution of tannic acid. Follow immediately with a 10 per cent silver nitrate spray. Place the patient under a heat cradle and repeat this process every half hour. A good tan is usually secured within two hours. The problem of having freshly prepared tannic acid solution available may be met by keeping small packages of the powder on hand. These can readily be made up in sterile water as needed.

Five per cent gentian violet solution may be used instead of tannic acid, followed by the 10 per cent silver nitrate spray.

Burns more than twenty-four hours old should not be tanned, but should be covered with 5 per cent sulfathiazole in a water soluble base. If the area is extensive, careful check must be kept of the sulfathiazole blood level.

For burns of the hands, face and genitalia application of 5 per cent sulfathiazole in a water soluble base is indicated after careful surgical cleansing. An alternative to this is a 1 per cent gentian violet spray. Pressure bandages are advantageous to combat swelling in burns of the hands.

(3) GENERAL AND SUPPORTIVE TREATMENT

Fluid may be given freely by mouth as tolerated but solid foods should be withheld until the stomach is retentive. Glucose solutions may be given intravenously to combat dehydration or to aid in preventing hemoconcentration but rates a poor second to plasma in restoring blood volume. Adrenal cortex hormone will help in preventing edema by restoring and maintaining capillary tone. Saline solutions intravenously usually increase the edema seen in burned patients.

Since infection is responsible for many of the delayed deaths, oral sulfonamide therapy should be employed routinely. We prefer sulfathiazole, one gram every four hours, beginning as soon as the patient enters the hospital. If urinary secretion is suppressed, the blood concentration must be closely checked.

(4) LATE TREATMENT OF THE BURNED AREA

If infection develops beneath the tan it should be removed. Unless the crusts are loose, this may require light anesthesia. If considerable infection is

present after removing the crusts the surface should be carefully cleansed with saline solution and sprinkled with sulfanilamide powder. The amount of powder should not exceed fifteen to twenty grams at one time, since considerable absorption may take place. Two-tenths per cent sulfanilamide in normal saline solution may also be used as a hot wet dressing in clearing up the infection and preparing the area for skin grafting, or this may be used alternately with the dry powder. Another alternative is sulfathiazole in aquaphor, which is definitely more comfortable to the patient, but not as easy to remove when the area is ready for grafting.

If no infection is present, the tan is removed in about ten to fourteen days and skin grafting is begun. Wet dressings of Dakin's solution for a day or so beforehand will facilitate the removal of the tan. The earlier skin grafting is started, the less scarring and deformity will occur, and the prolonged period of disability which is so often seen in major burns can frequently be aborted.

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KERATITIS MARGINALIS SUPERFICIALIS— An Acute Case*

NEILSON H. TURNER, M.D.,
Richmond, Virginia.

Superficial marginal keratitis is, fortunately, very rare, but when it does occur, as it sometimes does, in an acutely severe form, it may be disconcerting to the patient and to the ophthalmologist. This condition usually appears as a slow, progressive, chronic process, with a tendency to relapse, and may last over a period of several years. Having its inception at the limbus and involving the superficial layers, it advances toward the corneal center but apparently does not reach it. The following case proved to be one with rapid changes and intense injection with all the discomfort expected with extensive denudation of the corneal epithelium.

Miss M. J. W., white, clerk, about fifty-five years of age, came to see me on August 15, 1941, complaining about her left eye being very uncomfortable. There was a marked congestion involving the palpebral, the fornical and the adjacent bulbar conjunctiva with a slight amount of translucent jelly-like exudate. The next day the right eye was affected in the same manner. A simple zinc lotion was ordered, to which there was prompt response, but several days later there appeared in the cornea of each eye at the limbus minute areas of superficial involvement with ciliary injection. From this time on for five weeks, with several remissions, there appeared at twenty-four hour intervals, crops of opaque, finger-like projections, about one mm. wide, of sloughed-off epithelium and Bowman's membrane, radiating from the limbus toward the corneal center, and where they were very close, a coalescense would result, followed later by new blood vessel formations projecting into the cornea at the involved areas. Before being arrested the process continued until it had involved the left cornea from about four o'clock around to about one o'clock for a width of about three mm., and the right one from about seven o'clock around to two o'clock. There was an intense combined ciliary and episcleral congestion, extreme photophobia, excessive lachrymation and the sensation of grit in the eyes.

Complications which appeared were a mild iritis in both eyes; minute node-like infiltrations in the substantia propia of the right eye, extending from about ten o'clock around to about one o'clock, made their appearance at the beginning of the fourth week; hay-fever, to which she was subject, affected her beginning with the second week; and various local hypersusceptibilities, of which I will speak later, manifested themselves during the course of treatment.

Her history was negative, except that she had had mild attacks of sinus infection and was subject to hay-fever. An X-ray examination of her teeth revealed three with possible root infection, and removal was advised. A thorough examination by

*Read before the Richmond Eye, Ear, Nose and Throat Society, April 13, 1942. There have been slight addenda since.

Dr. Manfred Call, III, showed a slight lowering of the hemoglobin.

Simple treatment was of no avail. Applications of the commonly employed cauterizing agents such as tincture of iodine, phenol and silver nitrate (which was used with some hesitancy) resulted in immediate penetration into the proper substance of the cornea in each instance, followed by prompt regeneration of this layer later, after each was discontinued. Smears showed no bacteria. A course internally and locally of sulfathiazole had no effect. Because of idiosyncrasies, nupercaine, pontocaine, boric acid solution and one per mercurochrome solution could not be used in the eyes. Supportive treatment in the form of a multiple vitamin compound was given early, but was discontinued later. Dr. Call prescribed to combat the hemoglobin deficiency. There is little information in the literature as to this condition and the routine developed which had an immediate and continued favorable influence consisted of irrigations with half-normal saline solution, applications of U. S. P. ethyl alcohol to the denuded areas under local anaesthesia, flushing the eye with sterile water directly afterwards, the use of White's ointment, and later, dionin. Hot fomentations and atropine which had been used were continued. Phenobarbital was sufficiently effective to combat the insomnia resulting from the ocular discomfort. Constitutional treatment was in the form of plain Haliver oil, which was very satisfactory. This method of treatment was instituted during the latter part of the fourth week and marked improvement was noted within two days, and continued until complete healing had occurred on October 15, 1941. During the fifth week (September 17) injections of O. T., to which there was only a slight reaction, were started, and continued, because of their foreign protein effect, until recovery.

While this case and the literature (Fuchs) tend to confirm that there may be a limitation as to the extension of this process toward the corneal center, that portion of the path of involvement affected in the two eyes indicates that the entire corneal area adjacent to the limbus could become a prey to this condition. Had it done so in this instance before being arrested, it would have prolonged the duration much beyond the three months required.

I am unable to find support from this case or from the literature for an assumption that this is a self-limited process of from eight to ten weeks' duration. Nor is there occasion to confuse this condition with keratitis marginalis profunda, in which there is rarely a break in the corneal surface, and still less so with kerato-conjunctivitis sicca, in which the ocular manifestations consist of conjunctival hyperaemia, reduced lachrymation, hypertrophy of the corneal epithelium, a sense of itching or burning, photophobia, and reduced visual acuity.

This condition was probably neuropathic in origin with an allergic influence. Visual acuity remained unimpaired and the slightly nebulous state resulting was hardly noticeable.

200 East Franklin Street.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

This white patient, age 19, was delivered of her second child in her home after a normal pregnancy. She lived in the country. Labor was said to be uncomplicated. One cc. of pituitrin was given hypodermically after delivery and one ergotrate tablet was given by mouth. The ergotrate was repeated a short time afterwards. Fifteen minutes after delivery the uterus was said to be well contracted and the physician left the house. After this time, bleeding was noticed and the physician called. He arrived two hours later to find the patient nearly pulseless, and having passed large clots from the uterus. She died in an ambulance on the way to a hospital.

COMMENT

This is classified as a preventable obstetrical death and charged to error on the part of the physician, who left the patient unattended in her home fifteen minutes after the end of the third stage of labor. This is considered a rather typical case of postpartum hemorrhage and illustrates the ever pres-

ent danger of excessive bleeding after delivery. The committee agreed that the conventional hour of post-partum observation would most likely have given the physician an opportunity to save the patient. Deaths from hemorrhage are not unusual. During the past year the number of maternal fatalities from this cause have exceeded those from any other one cause in Virginia. Much progress has been made in reducing the mortality rate in toxemia. It is obvious that if our maternal death rate is to be further reduced it is necessary that hemorrhage be given study and receive more attention.

MENTAL HYGIENE ACTIVITIES

Study and Research in State Hospitals

For some time the State Hospital Board has been considering the matter of offering awards to hospital physicians for original or meritorious papers based upon observation of patients under their care.

The Board, with the approval of the Governor, has arranged to make available the sum of $500 each year for these awards; $250 for the first award, $150 for the second, $75 for the third, and $25 for an honorarium to some out-of-state authority who would pass on the relative merit of the papers.

Dr. J. Shelton Horsley first made the proposal to the Board and the Governor, and their enthusiastic approval was quickly given. Dr. R. Finley Gayle, Jr., and Dr. R. A. Morison, the other two physician members of the State Hospital Board, are serving on the committee with Dr. Horsley to work out proper rules and procedure to govern the conduct of the competition among the physicians.

Those physicians who are on leave of absence who are serving in the armed forces will be eligible to compete and it is hoped that most of them will participate.

The resolution adopted by the State Hospital Board on January 14, 1943, is as follows:

RESOLVED, that in order to stimulate interest in professional work among the physicians on the staffs of the State Hospitals, exclusive of the Superintendents, prizes will be given each year for original or meritorious papers, based preferably upon observations of patients under the doctors' care. The papers might concern either one unusual case or a group of cases. The diseases that are discussed may be common or ordinary diseases in which careful study of the cases will bring out some new points. The papers need not necessarily deal entirely with new clinical or laboratory features. These features or observations, however, may be reclassified and deductions drawn from them that have not heretofore been made.

The papers should be handed in to the Commissioner, Dr. Henry, by the first of June of each year and the award made by the first of October. This would give time for carefully examining the papers. It should be understood that this is an annual award so that any aspirant for the prize could carry on his work for a year or two with the expectation of having his essay considered sometime later. Not infrequently a series of observations must extend over a period of time.

The general rules governing this competition should be made out and a letter describing these general rules and the object of the competition should be mailed to every doctor connected with the State Hospitals. We do not believe the committee itself should have anything to do with the awards except to institute the technic by which they are given.

The sum of $500.00 is available each year for these prizes,—$250.00 for the first prize, $150.00 for the second, and $75.00 for the third prize. There should be $25.00 for an honorarium for some out-of-State authority who passes upon these papers. If no paper appears worthy of a prize, the money can accumulate until some succeeding year in which a worthy paper has been turned in.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for December, 1942, compared with the same month in 1941, and for the period of January through December, 1942, compared with the same period in 1941, follows:

	Dec. 1942	Dec. 1941	Jan.-Dec. 1942	Jan.-Dec. 1941
Typhoid and Paratyphoid	10	28	248	343
Diarrhea and Dysentery	55	78	4,526	5,580
Measles	59	484	4,932	35,600
Scarlet Fever	185	248	1,641	1,715
Diphtheria	67	116	695	754
Poliomyelitis	2	8	44	155
Meningitis	34	4	187	100
Undulant Fever	2	1	34	16
Rocky Mountain Spotted Fever	0	1	47	33
Tularemia	8	14	42	41

XUM

PLASMA RESERVES

It is of interest to the medical profession to know that the Office of Civilian Defense has made its reserves of plasma available for civilian use in all disasters, whether they are related to or resulting from enemy action. At the present time something over 50,000 units of prepared plasma are available, and it is expected to reach the full quota of 130,330 units in the near future.

The Office of Civilian Defense plasma reserves are of three types: liquid, dried and frozen. Liquid reserves are maintained in 150 hospitals which have received grants of Federal funds. Frozen plasma has been obtained through the Army and Navy from blood collected by the Red Cross in excess of immediate service requirements. Dried plasma is stored in centrally located Office of Civilian Defense depots. It can be transported long distances without special storage or handling, and can be moved by air to any stricken community in danger of exhausting its local supply.

Civilian reserves of blood plasma large enough to meet the requirements of more than 30 disasters as great as the recent Boston night club fire have been established at strategic locations throughout the country and are being added to constantly under the joint program of the Public Health Service and the Office of Civilian Defense.

Most of the plasma reserves are concentrated in the areas where enemy air raids are deemed most probable. Sizeable deposits are maintained also in inland regions for protection of communities in case of any major emergency in those areas.

The value of the Office of Civilian Defense plasma program was demonstrated in Boston at the time of the night club fire. In spite of the unprecedented demand for plasma, there was on hand in the city at the time of the fire almost twice as many units as were required for treatment of victims of that major disaster.

In Boston at the time of the fire were 500 units of dried plasma at the Office of Civilian Defense Regional Office, 1,000 units of frozen plasma in two hospital reserve depots, 200 units of Red Cross dried plasma, and 1,308 liquid and frozen plasma units at hospitals participating in the Office of Civilian Defense—U. S. Public Health Service plasma program, making a total of 3,008 units available at once.

Of this amount, about 1,500 units were used. More than 75 per cent of those hospitalized as the result of the fire required administration of some plasma and the Superintendent of the Boston City Hospital estimated that it saved the lives of at least 75 persons who were treated there.

Miscellaneous

A Doctor's Plea In Wartime

The doctor's life, in times like these,
Is not exactly one of ease.

For, on the home front, each M. D.
Is busier than any bee!

He's shouldering the burden for
The other docs, who've gone to war.

This leaves your doctor precious little
Time to sit around and whittle.

And indicates the reason why
You ought to help the poor old guy.

How?

1. By keeping yourselves in the best of condition.
   Thus avoiding the ills that demand a physican.
2. By phoning him promptly when illness gives warning,
   But—unless very serious—waiting till morning.
3. By cheerfully taking whatever appointment
   He makes for prescribing his pills or his ointment.
4. By calling on him where he works or resides
   Instead of insisting he rush to your sides.
   (Of course, he'll come 'round when there's need for his service
   But spare him the trip when you're nothing but nervous.)
5. And, last but not least, you can help in this crisis
   By carefully following doctor's advices.

If these commandments you'll adhere to
A doctor's heart you will be dear to!

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Editorials

The Excretion of Nicotine in Breast Milk and Urine from Cigarette Smoking: Its Effect on Lactation and the Nursling.

PERLMAN, Dannenberg and Sokoloff raise a very timely question in the November 28, 1942, issue of the J. A. M. A. In the past ten years the consumption of cigarettes in the United States has increased from 113,500,000,000 to 189,769,000,000. This increase is thought to be due largely to women smokers. Whether cigarette smoking by pregnant and parturient women is harmful cannot be answered definitely from any scientific evidence available. Schoenbeck has shown that pregnant rabbits exposed to the smoke of one cigarette a day had litters that had a birth weight approximately 17 per cent less than those of the control litters. The stillbirth rate was ten times as great and the mortality rate definitely increased, since only one-third as many off-spring of mothers exposed to smoke were alive at maturity.

Clinical studies of the effect of cigarette smoking on parturient women have led to conflicting opinions. Thompson, from a review of the literature and from personal observation (Thompson, W. B., Am. J. Obst. & Gyn. 26:662, 1933), was of the opinion that smoking in moderation had little effect upon lactation. If, however, the patient smoked eight or more cigarettes a day, lactation was inadequate three months after delivery. Mgalobeli (Monatschr. f. Geburtsh. u. Gynak. 88:237, 1931) noted that women employed in tobacco factories not only had fewer pregnancies, but also that their pregnancies more frequently terminated in miscarriages and infant deaths, all of which he attributed to the influence of nicotine on the sex organs. Chiasson (J. A. M. A. 93:1909, 1929) on the other hand found exceptional fertility and lactation in a group of French women who were habitual pipe smokers. Williamson and others of the obstetrical department of Cornell have never observed any diminution in

the secretion of milk or any effect on a child which could be attributed to the smoking of cigarettes by the mother. Emanuel (Ztschr. f. Kinderh. 52:41, 1931) has shown that nicotine passes in slight amounts into the milk and in larger amounts into the urine four or five hours after smoking. It may appear as early as one or two hours and may persist as long as seven or eight after smoking. With the possible exception of two cases, no changes were observed in the infants following the ingestion of nicotine-containing milk. Emanuel was of the opinion that five or six cigarettes might be safely allowed the nursing mother, but that more than fifteen cigarettes a day might be harmful to the infant.

Perlman and his co-workers studied fifty-five white mothers who were addicted to smoking. As a test animal they used Daphnia magna, a transparent fresh water crustacean. These animals vary in their sensitivity to nicotine according to age and sex. Ten-day old females were used. They were grown in a weak infusion (0.75 to 0.1 per cent) of cow manure so that they would have more pigment and therefore be more readily visible in milk. Visibility in the milk was further increased by removing the fat. By comparing the time at which paralysis sets in in a given specimen and in a solution of nicotine of a known strength, the amount of nicotine in the specimen can be determined.

The mothers were divided into groups according to the number of cigarettes smoked over a twelve hour period. Group A smoked from 1 to 4, group B from 5 to 10, and group C 11 or more. In group A the average concentration of nicotine was 0.116 mg. per liter in the morning specimens and 0.16 in the afternoon specimens. In group B the average concentration of nicotine in the morning milk was 0.225 and in the afternoon milk 0.278 mg. per liter. In group C the morning milk contained 0.445 mg. per liter and the afternoon specimens averaged 0.5 mg. per liter. In each group the amount of nicotine in the urine was more than ten times greater than in the milk. Nicotine was detected in the milk and urine of every woman who smoked. There was a definite correlation between the amount of nicotine and the number of cigarettes smoked. However, the nurslings were apparently unaffected by the amount of nicotine they ingested with the milk.

The question is still unanswered. The only thing that can be stated positively is that cigarette smoking is followed by the excretion of nicotine in the milk. Whether this is harmful to the baby cannot be answered now. Another aspect of cigarette smoking is the effect on pregnancy itself. That nicotine can be found so constantly in the breast milk and in the urine is good evidence that it is widely distributed in the body. Does it cause abortions? One is impressed by the number of inevitable abortions now-a-days, and abortions in women who are anxious for children. Is this increase, which has occurred since cigarette smoking by women has become so prevalent, real or only apparent? It is undoubtedly true that we see our patients earlier in pregnancy than ever before. It is quite possible that many of these early abortions would have gone unrecognized had they not been under medical supervision. Furthermore, more women are being treated for sterility than ever before, and consequently more women of low fertility conceive than formerly. This, however, could account for only a few of the threatened and inevitable abortions we see. Is cigarette smoking a factor? The answer of this comparatively new question becomes more important because of the war.

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Wanted: A White Collar John Henry or Paul Bunyan

IT used to be considered good form to answer the letters one received, certainly within two weeks. Furthermore, the courteous thing to do was to answer in the same form. A typewritten letter required a typewritten reply, and a holographic letter called for one written by hand. We remember the late Dr. Blackwell complaining about the late President Taft writing to him with pen and ink and that he had become so spoiled by a good secretary that he hated to write a pen and ink reply. It was the only time we ever heard Dr. Blackwell complain, and we rather think his real complaint was that we had replied to one of his letters with a postal card.

Such a code worked no hardship in the days when one wrote only to one's acquaintances, when there were no mimeograph machines, no questionnaires and no "sucker lists". Now the majority of your mail is from someone you have never heard of and about something of which you neither know nor care. The temptation to use the wastebasket often gets the best of your courtesy. Why has not some storywriter invented a White Collar John Henry or Paul Bunyan? It seems they have missed a wonderful opportunity.

According to Ruark Bradford, John Henry was born in the "Black River country where the sun don't never shine". He died trying to "roll cotton" faster than a steam winch. A more scholarly study of the John Henry saga (Johnson, Guy Benton, John Henry, tracking down a negro legend. The University of North Carolina Press, 1929) places his birth place in Virginia. He was a steel-driving man and died competing with a steam drill. Paul Bunyan, on the other hand, was born on the Bay of Fundy, and when he turned over in his log cradle, he started the famous tidal waves of that region. The Grand Canyon was made by his dragging his heavy peavy along as he went to the Pacific coast. When he became disgusted with the new-fangled logging methods, he retired with his fore-and-aft moose terrier, Elmer, to the wildest country he could find. Men say he can never die until the last tree is cut down.

It matters not where our swivel-chair hero is born, but after he has had his fling at competing with new-fashioned office machinery, he should be retired to some insane asylum whence from time to time he can send forth sane and whimsical observations on the cockeyed world we live in and where the people use alphabetical abbreviations instead of words, and where numbers no longer mean a thing.

Howard Atwood Kelly, B.A., M.D., LL.D., F.A.C.S.
1858-1943

IN the death of Dr. Howard A. Kelly on January 12th the medical profession lost one of its brightest minds. He was the youngest and for the past few years the only survivor of the "Big Four" of Sargeant's great painting. It is said that his coming to Johns Hopkins was due to Osler who told Billings that there was a young surgeon at Kensington Hospital whose work he should watch. The other members of the "Big Four" were selected for various reasons. Welch, who was trained in the best-known German laboratories, came as the very embodiment of German medicine. Osler was trained in British methods with a certain amount of German and French influence. Halstead came as a brilliant New York surgeon. Kelly was more of a local product and had only his work to recommend him.

The others taught well established subjects. Kelly had to develop his. When he came to Johns Hopkins, Gynecology, if it were taught at all, was combined with other subjects such as Medical Jurisprudence and Hygiene. A favorite title was Professor

of Surgical Diseases of Women, of Gynecology and Abdominal Surgery, or of Women and Operative Midwifery. Dr. William Travis Howard was Professor of Diseases of Women and Children at the University of Maryland when Dr. Kelly came to Hopkins as Professor of Obstetrics and Gynecology. Two years later Whitridge Williams took over Obstetrics and Kelly became Professor of Gynecology.

The early days, when Gynecology was finding itself, were anything but harmonious. The echoes of the battles that the founders, Marion, Emmet, and Joe Price, waged among themselves come down to us even now. Kelly held his own in these contests and yet kept on good terms with each. It is hard to realize that in one lifetime so much has been accomplished. Some years ago at the dinner given in honor of Dr. Kelly on his seventy-fifth birthday, Dr. Chipman told of Kelly's first visit to Edinburgh. Chipman was an interne at the time, and Kelly performed an hysterectomy. The operation had never been done in Edinburgh before and Chipman spent most of the night before washing sea-sponges and threading needles in preparation for the great event. There were, of course, no rubber gloves, nor any attempt at asepsis, for all that lay in the future. During his lifetime national gynecological societies were organized in all countries and he was either an active, corresponding or honorary Fellow of all. When the Medical Library was in the Johns Hopkins Hospital, before it was moved to the Welch Building, the certificates of his membership in these societies used to decorate the walls of the back room.

Although Kelly helped to make a specialty, his activities were by no means confined to that specialty. He was a pioneer in the use of radium and was instrumental in starting the first school of Medical Illustration. Max Brödel was brought to Baltimore to illustrate Kelly's Operative Gynecology. He remained to continue his medical illustrating, to do investigation in Anatomy and finally to start the first course in Medical Illustration.

Kelly loved flowers, and in his student days made a worthwhile collection of native Pennsylvania ferns. He wrote a delightful book upon early American botanists commemorated in botanical nomenclature. His interest in snakes is well known and gave rise to many stories about venomous reptiles inhabiting his bookshelves. He was Honorary Curator of the Division of Reptiles and Amphibians of the University of Michigan. Being an avid book collector, he had an especially fine collection of Florence Nightingale items. Anyone writing a book on women in medicine, missionary medicine, or anything pertaining to the history of medicine, could count on him for an introduction.

Besides his Operative Gynecology, he was the author of The Vermiform Appendix and its Diseases (with Elizabeth Hurdon), 1905; Walter Reed and Yellow Fever, 1906-07, 23; Gynecology and Abdominal Surgery (edited with C. P. Noble), Vol. I, 1907, Vol. II, 1908; The Stereo-Clinic, 84 sections, 1908; Medical Gynecology, 1908 and 1912; Appendix and Other Diseases of the Vermiform Appendix, 1909; Myomata of the Uterus (with T. S. Cullen), 1909; Cyclopedia of American Medical Biography (2 volumes), 1912; Some American Medical Botanists, 1913; Diseases of the Kidneys, Ureters and Bladder (with C. F. Burnam—2 vols.), 1914, 1922; American Medical Biographies (with W. L. Burrage), 1920; A Scientific Man and the Bible, 1925; Gynecology, 1928; Dictionary of American Medical Biography (with W. L. Burrage), 1928; Electrosurgery (with Grant E. Ward), 1932; also some five hundred scientific articles.

Along with all this, he took his religion seriously, and was quite as well known for his Sunday School talks in various parts of the country as he was in medical circles.

Societies

The Southampton County Medical Association

Met at the Raiford Hospital, Franklin, on December 15th, under the presidency of Dr. Morgan B. Raiford. The following scientific program was presented: Ulcer of Stomach by Dr. Wright Clarkson, Petersburg; Medical Preparedness by Dr. Julian Rawls, Norfolk; and a motion picture on Ulcer of the Stomach prepared by John Wyeth & Brother.

It was proposed by the members that a permanent exhibit of the history of medicine be gathered for Southampton County with books and equipment used by physicians of the past years. Each member was asked to contribute to the work by being responsible for community's medical history. Between the scientific and business sessions, dinner was served at the Raiford Hospital.

Dr. W. T. McLemore, Courtland, is secretary of this association. The next meeting will be held in April.

Albemarle County Medical Society.

At the annual meeting of this Society, the following officers were elected for the coming year: President, Dr. David C. Wilson; vice-president, Dr. Samuel A. Vest; and secretary-treasurer, Dr. M. K. Humphries, Jr.

The Northampton County Medical Society

Held its regular quarterly meeting at Eastville on January the 14th, at which time the speaker of the evening was Dr. Donald T. Imrie of the Crippled Children's Hospital of Richmond. His subject was "Recent Trends and Current Attitudes in Orthopedics" and was of especial interest to general practitioners.

Election of officers resulted as follows: President, Dr. W. T. Green of Nassawadox; vice-president, Dr. J. M. Lynch of Cape Charles; and secretary, Dr. W. Carey Henderson (re-elected) of Nassawadox. Dr. J. W. Jackson of Machipongo was elected to the Board of Censors for a term of three years, and Dr. W. J. Sturgis of Nassawadox was elected to succeed himself as trustee from the Society to the Board of the Northampton-Accomack Memorial Hospital.

W. CAREY HENDERSON,
Secretary.

Patrick-Henry Medical Society.

At the annual meeting of this Society, Dr. W. N. Thompson of Stuart was elected president for the year 1943 and Dr. H. G. Hammond of Martinsville was elected secretary-treasurer.

The Tazewell County Medical Society

Held its regular January meeting on the 14th, at North Tazewell. At this time Dr. W. R. Counts of Bishop was elected to membership in the Society.

Dr. E. M. Fusco of Grundy read a most interesting paper on "The Kenny Method of Treating Infantile Paralysis", and showed in conjunction with his paper a short movie film he had taken on his trip to Minneapolis where he observed Sister Kenny's methods in use. Dr. J. A. Robinson, Richlands, Virginia, presented a series of x-ray films and discussed them. This was followed by a general discussion of both papers.

MARY E. JOHNSTON, *Secretary.*

Richmond Academy of Medicine.

At the regular meeting of the Academy on January the 26th, with the president, Dr. A. S. Brinkley, presiding, the following program was presented:

Three Gallbladders—Dr. W. Lowndes Peple
Discussor—Dr. Frank Johns

Rheumatic Fever: Preventive and Public Health Aspects—Dr. Louise Fry Galvin
Discussors—Dr. Paul Camp and Dr. E. C. Harper

News

Our Men Need Books.

The 1943 Victory Book Campaign has been undertaken at the request of the armed forces and has been approved by the Office of War Information. It is sponsored by the American Library Association, the American Red Cross and the U.S.O. Good books—popular and technical—are wanted for men in all branches of the service, for the education and

enjoyment of the soldiers, sailors and marines. Each reader is asked to leave such books as he can give at his nearest collection center or public library.

The Virginia Neuro-Psychiatric Society

Will hold its winter meeting in the Richmond Academy of Medicine Building, Richmond, on February the 16th at 2:00 p.m., at which time the following program is to be presented:

Guillien-Barre Syndrome in a Child, Report of a Case—Dr. R. Finley Gayle, Richmond.

Preliminary Report of 200 Autopsy Cases at the Eastern State Hospital, with Special Emphasis on Neuro-Pathology and Brain Tumor in Old Age—Dr. I. S. Zfass, Williamsburg, and Dr. W. Riese, Medical College of Virginia.

Os Occupational Therapy—Dr. J. K. Hall, Richmond.

Fear Emotion and Its Home Front Reaction—Dr. Beverley R. Tucker, Richmond.

Dr. Howard R. Masters, Richmond, is president, and Dr. Joseph R. Blalock, Marion, secretary.

Tri-State Association Will Not Have A 1943 Meeting.

Upon vote by officers of the Tri-State Association of the Carolinas and Virginia, it has been decided that this organization will not have a meeting this year in February as has been its custom for many years. It is confidently believed, however, that the members will come together with renewed zest when the Association votes to resume its sessions.

An Omission.

By inadvertence, the name of Dr. C. C. Haskell of Richmond was omitted from the review on "The Critical Antimalarial Problem and Its Solution", which appeared in the January MONTHLY, page 52. The editor is not loath to claim credit for this article but believes the readers would rather know this condensation was prepared by an authority.

Dr. Eugene M. Landis,

Head of the Department of Internal Medicine of the University of Virginia, has resigned to accept a place on the medical faculty at Harvard University. He will become George Higginson Professor of Physiology and will enter upon his duties on July 1st. Dr. Landis came to the University in the fall of 1939.

Dr. Welchons Resigns.

Dr. George A. Welchons, superintendent of Pine Camp Sanatorium, Richmond, is resigning that position to enter private practice about March 1st.

Examination Dates Changed.

Owing to the fact that the medical schools in Virginia and many other states have advanced their graduation dates on account of the exigencies of war, the next examinations by the Virginia State Board of Medical Examiners will be held in Richmond, March 24-27, instead of in June as heretofore. All applications must be complete in the hands of the secretary, Dr. J. W. Preston, Roanoke, at least ten days in advance of examinations.

Dr. Joseph E. Cox,

Who formerly practiced pediatrics in Waynesboro and Staunton, was promoted to the rank of Lieutenant Colonel in the Medical Corps of the Army on December the 31st, and is now in command of the 43rd Station Hospital at Camp Blanding, Florida.

Married.

Dr. Charles James Frankel, University, and Miss Gladys Louise Birmingham, Buena Vista, January 8th. Dr. Frankel is assistant professor of orthopedics at the University Hospital.

Dr. Carey Addison Stone, Jr., Crewe, and Miss Cornelia Daniel Preston, Lewisburg, W. Va., January 7th. Dr. Stone is now a Lieutenant in the Medical Corps, U. S. Army Air Force and is stationed at Hunter Field, Savannah, Georgia.

Dr. Clara Joel, Richmond, and Corporal Edward Fleisher, Bethlehem, Pa., January 5th. Dr. Joel graduated from the Medical College of Virginia, class of 1942.

Dr. William T. Sanger,

President of the Medical College of Virginia, was recently elected president of the Richmond Chapter of the Virginia Cancer Foundation. Dr. Reuben F. Simms was named a new member of the Board of Trustees.

Richmond City Coroner.

Dr. J. Hamilton Scherer, city coroner since October 1936, has resigned and Dr. R. Manton Wilson, former city epidemiologist, and since last September head of the new medical aid division of the City Health Department, has been appointed to the post. Dr. B. Black-Schaffer of the Medical College of Virginia has been appointed assistant coroner.

Annual Spring Graduate Course.

The Gill Memorial Eye, Ear and Throat Hospital, Roanoke, will hold its seventeenth annual spring graduate course, April 5th to 10th. Members of the faculty will be: Drs. C. H. Best, Toronto, Canada; A. L. Brown, Cincinnati; Ramon Castroviejo, New York; Albert A. Cinelli, New York; Bruce Fralick, Ann Arbor; Perry Goldsmith, Toronto, Canada; George P. Guibor, Chicago; French K. Hansel, St. Louis; Willis S. Knighton, New York; Peter C. Kronfeld, Chicago; John R. Lindsay, Chicago; John M. McLean, New York; Robert J. Masters, Indianapolis; John R. Richardson, Boston; Theo. E. Walsh, St. Louis; and Rear Admiral Luther Sheldon, Jr., Washington, D. C. Resident members are Drs. E. G. Gill and James H. Gressette.

Medical College of Virginia News.

Dr. Eugene Kellersberger, General Secretary of the American Mission to Lepers of New York, spoke to the senior students in the school of medicine, and to the monthly faculty and staff meeting, on January 14.

Dr. Jacques P. Gray, dean of the school of medicine, spoke to the membership of the Southside Community Hospital, Farmville, on January 20.

Dr. William T. Sanger, president, spoke on the "Foods for Victory School" program, sponsored by the Office of Civilian Defense, in Norfolk, on January 20.

Dr. Randolph H. Hoge, assistant professor of surgery, has been elected a fellow of the American College of Surgeons.

Dr. J. H. Weatherby, research associate in pharmacology, has been commissioned a lieutenant (Senior Grade) in the navy and ordered to Pensacola, Florida, for active duty.

The W. K. Kellogg Foundation of Battle Creek, Michigan, has made an additional grant of $5,000 for student loans in the school of medicine.

Dr. Rolland J. Main, professor of physiology, recently spoke to the Richmond Dietetic Association on "Recent Advances in Endrocrinology".

Dr. Fred J. Wampler, professor of preventive and industrial medicine, attended the Congress on Industrial Health in Chicago, January 11-13.

It is expected that the Honorable Colgate W. Darden, Jr., Governor of Virginia, will make the Commencement address on the night of March 20.

Dr. W. T. Sanger, president, and Miss Louise Grant, dean of the school of nursing, attended a conference on pre-medical and pre-nursing studies at the College of William and Mary on January 15.

Dr. Jacques P. Gray, dean of the school of medicine, and Dr. W. T. Sanger, president, will attend the Congress on Medical Education and Hospitals, Chicago, the middle of February.

Dr. Lewis E. Jarrett, director of the hospital division, will attend a meeting of the board of trustees of the American Hospital Association in Chicago, February 8-14.

Dr. Philip D. Wilson, orthopedic surgeon of New York City, will deliver the annual Stuart McGuire Lectures of the College on February 25 and 26.

News From University of Virginia, Department of Medicine.

At the meeting of the Southern Medical Association in Richmond, Virginia, on November 13, Dr. D. C. Smith was elected Chairman of Section in Dermatology and Syphilology.

On Wednesday, January 6, 1943, The Winthrop Chemical Company of New York City and Windsor, Ontario, showed motion pictures on "The Treatment of Malaria with Atabrine", and "Regional Anesthesia" in the amphitheater.

On Friday, January 8, 1943, Dr. W. H. Brown, Dean of School of Public Health, University of North Carolina, gave two lectures—one on "Malaria" and the other on "Parasitic Infections". These lectures were under the auspices of "The National Research Council", and were given in the amphitheater.

Dr. Charles P. Ryland

Of Washington, D. C., is now serving in the U. S. Navy with the rank of Lieutenant Commander and is located at the Navy Yard in Washington. He is a graduate of the medical College of Virginia, class of '29.

Captain Micajah Boland, MC., USN.,

Is now on active duty at the Receiving Station, Norfolk.

XUM

Dr. Paul Camp

Spoke before the Richmond Dental Society at its meeting in January, his subject being "Certain Cardiac Emergencies and Their Relation to Dental Practice".

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Chadwick, M.—The psychological effects of menstruation.

Corner, G. W.—The hormones and human reproduction.

Ford, E. B.—Genetics for medical students.

Fry, C. C.—Mental health in college.

Hitschmann, E. & Bergler, E.—Frigidity in women.

Jellinek, E. M.—Alcohol addiction and chronic alcoholism.

Leonardo, R. A.—American surgeon abroad.

Levine, M.—Psychotherapy in medical practice.

Mackintosh, J. M., ed.—War and the doctor.

Quick, A. J.—The hemorrhagic diseases and the physiology of hemostasis.

Smart, J.—Lice.

Wallace, A. B.—The treatment of burns.

Weiss & English—Psychosomatic medicine.

Obituaries

Dr. Don Preston Peters,

Prominent surgeon of Lynchburg, died January 20th. He was sixty-five years of age and graduated in medicine from the University of Virginia in 1902. Dr. Peters practiced in Baltimore before locating in Lynchburg in 1919. He was considered an authority on Confederate history and was the owner of one of the world's finest collections of Confederate stamps. His wife and several children, one of whom is Dr. Don Preston Peters, Jr., survive him.

Dr. Henry Sycle Stern,

Well known pediatrician of Richmond, died at his home on December 24, several hours after a heart attack. Dr. Stern was born in this city nearly forty-nine years ago and received his medical education at the Medical College of Virginia, from which he graduated in 1914. He was a member of his local, state and national medical associations, the Richmond Pediatric Society and a fellow of the American Academy of Pediatrics and was associate professor of pediatrics at his alma mater. Dr. Stern served in World War I, being attached to Evacuation Hospital 18. He is survived by his wife and two children.

Dr. Robert Minor Wiley,

Salem, died January 5th. He was seventy-two years of age and a graduate of the Medical College of Virginia in 1895. Dr. Wiley had been a member of the Medical Society of Virginia for forty-seven years. His wife and three daughters survive him.

Dr. William Leslie Davenport,

Retired physician of Amelia, died December 22, after a brief illness. He was a native of Kentucky and 82 years of age. He graduated from the College of Physicians and Surgeons of Baltimore in 1893 and practiced for twenty-three years in Washington County before locating in Amelia. He had been a member of the Medical Society of Virginia for a number of years. His wife and several children survive him.

Dr. George Washington Crile,

Internationally known surgeon of Cleveland, died January 7th, at the age of seventy-eight. He was the discoverer of adrenalin and was believed to be the first person to make a direct blood transfusion. Dr. Crile was the first to operate locally for goiter and, in 1920, reported that he had eliminated surgical shock by administering nitrous oxide. He had spent more than fifty years in medical and scientific research and is credited with numerous other discoveries.

Mrs. Grace Wilkins Holland,

Wife of Dr. Griffin W. Holland, died suddenly at her home in Eastville, December 26. She was president of the Woman's Auxiliary to the Medical Society of Virginia for the year 1940-41.